

Prof. Dr. Alfred Toth

Offene, halboffene und abgeschlossene semiotische natürliche Transformationen

1. In Toth (2019a) hatten wir argumentiert, daß die Definition der drittheitlichen Trichotomie überflüssig und zudem inkonsistent ist, weil sie erstens die logische Subjektposition repräsentiert, aber von Peirce, Bense und Walther (1979) topologisch und logisch definiert wird. Zweitens weil der Zusammenhang von Zeichen ein Problem einer Zeichensyntax ist, aber keine Eigenschaft des Zeichens selbst (vgl. Klaus 1962). Bense selbst hatte das Zeichen wiederholt rein mathematisch definiert, so etwa kategoriethoretisch in (1979, S. 53 u. 67) oder zahlentheoretisch in (1981, S. 17 ff.). Drittens lassen sich die ersten zwei Trichotomien durch

$$(x.1): \quad Z = f(\Omega)$$

$$(x.2): \quad Z = f(\omega, t)$$

$$(x.3): \quad Z \neq f(\Omega)$$

mit $x \in (1, 2)$ definieren, was jedoch für die dritte Trichotomie nicht möglich ist, da der Zusammenhang von Zeichen keine Funktion des Objektes, sondern eine solche einer Menge von Zeichen ist

$$Z = f((Z)).$$

Für den Trivialfall, daß die Menge aus dem Zeichen selbst besteht, gilt dann natürlich

$$Z = f(Z).$$

Es genügt also völlig, von der semiotischen 2×3 -Teilmatrix

	.1	.2	.3
1.	1.1	1.2	1.3
2.	2.1	2.2	2.3

auszugehen und jedes Subzeichen der Form

$$S = (x.y)$$

mit $x \in (1, 2)$ und $y \in (1, 2, 3)$

durch

$$(x.1) = f(\Omega)$$

$$(x.2) = f(\omega, t)$$

$$(x.3) \neq f(\Omega)$$

zu definieren. Ein offener Konnex kann dann definiert werden durch

$$(x.y),$$

ein abgeschlossener Konnex durch

$$(x.y] \text{ oder } [x.y)$$

und ein vollständiger Konnex durch

$$[x.y].$$

Bei den dicentischen Konnexen ergibt sich also eine systematische Doppeldeutigkeit. Da ferner der Interpretantenbezug in den semiotischen Relationen syntaktisch und nicht mehr kategorial angegeben wird, fällt auch die ad hoc-Bestimmung, daß ein Zeichen zwar durch $P = (1, 2, 3)$, eine Zeichenklasse aber in der konversen Ordnung $ZKl = (3, 2, 1)$ als Folge der „pragmatischen“ Maxime von Peirce definiert wird, weg. Wir müssen also die $27 + 9 = 36$ semiotischen Relationen, die über einer 2×3 -Matrix generierbar sind, in den folgenden Normalformen angeben (vgl. Toth 2019b, c). Dadurch erhält man also eine vollständige syntaktische Semiotik, d.h. eine dyadisch-trichotomische Semiotik, deren Interpretantenkonnexe auf syntaktischem Wege ausgedrückt werden.

(1.1, 2.1)	(1.1, 2.1]	[1.1, 2.1)	[2.1, 1.1]
(1.1, 2.2)	(1.1, 2.2]	[1.1, 2.2)	[2.1, 1.2]
(1.1, 2.3)	(1.1, 2.3]	[1.1, 2.3)	[2.1, 1.3]
(1.2, 2.1)	(1.2, 2.1]	[1.2, 2.1)	[2.2, 1.1]
(1.2, 2.2)	(1.2, 2.2]	[1.2, 2.2)	[2.2, 1.2]
(1.2, 2.3)	(1.2, 2.3]	[1.2, 2.3)	[2.2, 1.3]
(1.3, 2.1)	(1.3, 2.1]	[1.3, 2.1)	[2.3, 1.1]

$(1.3, 2.2)$	$(1.3, 2.2]$	$[1.3, 2.2)$	$[2.3, 1.2]$
$(1.3, 2.3)$	$(1.3, 2.3]$	$[1.3, 2.3)$	$[2.3, 1.3]$

Insgesamt gibt es also $36 \text{ mal } 36 = 1296$ paarweise Kombinationen von Paaren von Subzeichenzahlen, die wir im folgenden als Ausgangsbasis für die in der semiotischen Kommunikationstheorie sowie in der semiotischen Kreationstheorie benutzten Tripel vollständig auflisten.

Im Unterschied zu Toth (2019d) wollen wir uns allerdings die Tatsache nutzbar machen, daß jedes der obigen 36 Paare sich bijektiv abbilden läßt auf eine semiotische natürliche Transformation (vgl. Toth 1997, S. 21 ff.), d.h. wir gehen statt von dem obigen zahlentheoretischen von dem folgenden kategoriethoretischen System aus (vgl. Toth 2019e)

(id_1, α°)	$(id_1, \alpha^\circ]$	$[id_1, \alpha^\circ)$	$[\alpha^\circ, id_1]$
(id_1, id_2)	$(id_1, id_2]$	$[id_1, id_2)$	$[\alpha^\circ, \alpha]$
(id_1, β)	$(id_1, \beta]$	$[id_1, \beta)$	$[\alpha^\circ, \beta\alpha]$
(α, α°)	$(\alpha, \alpha^\circ]$	$[\alpha, \alpha^\circ)$	$[id_2, id_1]$
(α, id_2)	$(\alpha, id_2]$	$[\alpha, id_2)$	$[id_2, \alpha]$
(α, β)	$(\alpha, \beta]$	$[\alpha, \beta)$	$[id_2, \beta\alpha]$
$(\beta\alpha, \alpha^\circ)$	$(\beta\alpha, \alpha^\circ]$	$[\beta\alpha, \alpha^\circ)$	$[\beta, id_1]$
$(\beta\alpha, id_2)$	$(\beta\alpha, id_2]$	$[\beta\alpha, id_2)$	$[\beta, \alpha]$
$(\beta\alpha, \beta)$	$(\beta\alpha, \beta]$	$[\beta\alpha, \beta)$	$[\beta, \beta\alpha]$.

Danach ist es also möglich, auch bei Kategorien zwischen drei Sorten von Konnexen zu unterscheiden. (Man hüte sich davor, die in der Topologie gebräuchliche vierfache Differenzierung zwischen offenen, abgeschlossenen, sowohl offenen als auch abgeschlossenen und weder offenen noch abgeschlossenen Mengen mit den hier verwendeten Begriffen der „Offenheit“, „Halboffenheit“ und „Abgeschlossenheit“ zu verwechseln.)

2. Offene Zeichenkonnexe

2.1. Kombinationen mit $(\text{id1}, \alpha^\circ)$

$((\text{id1}, \alpha^\circ), (\text{id1}, \alpha^\circ))$

$((\text{id1}, \alpha^\circ), (\text{id1}, \text{id2}))$

$((\text{id1}, \alpha^\circ), (\text{id1}, \beta))$

$((\text{id1}, \alpha^\circ), (\alpha, \alpha^\circ))$

$((\text{id1}, \alpha^\circ), (\alpha, \text{id2}))$

$((\text{id1}, \alpha^\circ), (\alpha, \beta))$

$((\text{id1}, \alpha^\circ), (\beta\alpha, \alpha^\circ))$

$((\text{id1}, \alpha^\circ), (\beta\alpha, \text{id2}))$

$((\text{id1}, \alpha^\circ), (\beta\alpha, \beta))$

$((\text{id1}, \alpha^\circ), (\text{id1}, \alpha^\circ])$

$((\text{id1}, \alpha^\circ), (\text{id1}, \text{id2}])$

$((\text{id1}, \alpha^\circ), (\text{id1}, \beta])$

$((\text{id1}, \alpha^\circ), (\alpha, \alpha^\circ])$

$((\text{id1}, \alpha^\circ), (\alpha, \text{id2}])$

$((\text{id1}, \alpha^\circ), (\alpha, \beta])$

$((\text{id1}, \alpha^\circ), (\beta\alpha, \alpha^\circ])$

$((\text{id1}, \alpha^\circ), (\beta\alpha, \text{id2}])$

$((\text{id1}, \alpha^\circ), (\beta\alpha, \beta])$

$((\text{id1}, \alpha^\circ), [\text{id1}, \alpha^\circ))$

$((\text{id1}, \alpha^\circ), [\text{id1}, \text{id2}))$

$((\text{id1}, \alpha^\circ), [\text{id1}, \beta))$

$((\text{id1}, \alpha^\circ), [\alpha, \alpha^\circ])$

$((\text{id1}, \alpha^\circ), [\alpha, \text{id2}])$

$((\text{id1}, \alpha^\circ), [\alpha, \beta])$

$((\text{id1}, \alpha^\circ), [\beta\alpha, \alpha^\circ])$

$((\text{id1}, \alpha^\circ), [\beta\alpha, \text{id2}])$

$((\text{id1}, \alpha^\circ), [\beta\alpha, \beta])$

$((\text{id1}, \alpha^\circ), [\text{id1}, \alpha^\circ])$

$((\text{id1}, \alpha^\circ), [\text{id1}, \text{id2}])$

$((\text{id1}, \alpha^\circ), [\text{id1}, \beta])$

$((\text{id1}, \alpha^\circ), [\alpha, \alpha^\circ])$

$((\text{id1}, \alpha^\circ), [\alpha, \text{id2}])$

$((\text{id1}, \alpha^\circ), [\alpha, \beta])$

$((\text{id1}, \alpha^\circ), [\beta\alpha, \alpha^\circ])$

$((\text{id1}, \alpha^\circ), [\beta\alpha, \text{id2}])$

$((\text{id1}, \alpha^\circ), [\beta\alpha, \beta])$

2.2. Kombinationen mit (id1, id2)

$((\text{id1}, \text{id2}), (\text{id1}, \alpha^\circ))$

$((\text{id1}, \text{id2}), (\text{id1}, \text{id2}))$

$((\text{id1}, \text{id2}), (\text{id1}, \beta))$

$((\text{id1}, \text{id2}), (\alpha, \alpha^\circ))$

$((\text{id1}, \text{id2}), (\alpha, \text{id2}))$

$((\text{id1}, \text{id2}), (\alpha, \beta))$

$((\text{id1}, \text{id2}), (\beta\alpha, \alpha^\circ))$

$((\text{id1}, \text{id2}), (\beta\alpha, \text{id2}))$

$((\text{id1}, \text{id2}), (\beta\alpha, \beta))$

$((\text{id1}, \text{id2}), (\text{id1}, \alpha^\circ])$

$((\text{id1}, \text{id2}), (\text{id1}, \text{id2}])$

$((\text{id1}, \text{id2}), (\text{id1}, \beta])$

$((\text{id1}, \text{id2}), (\alpha, \alpha^\circ])$

$((\text{id1}, \text{id2}), (\alpha, \text{id2}])$

$((\text{id1}, \text{id2}), (\alpha, \beta])$

$((\text{id1}, \text{id2}), (\beta\alpha, \alpha^\circ])$

$((\text{id1}, \text{id2}), (\beta\alpha, \text{id2}])$

$((\text{id1}, \text{id2}), (\beta\alpha, \beta])$

$((\text{id1}, \text{id2}), [\text{id1}, \alpha^\circ))$

$((\text{id1}, \text{id2}), [\text{id1}, \text{id2}))$

$((\text{id1}, \text{id2}), [\text{id1}, \beta))$

$((\text{id1}, \text{id2}), [\alpha, \alpha^\circ))$

$((id1, id2), [\alpha, id2])$

$((id1, id2), [\alpha, \beta])$

$((id1, id2), [\beta\alpha, \alpha^\circ])$

$((id1, id2), [\beta\alpha, id2])$

$((id1, id2), [\beta\alpha, \beta])$

$((id1, id2), [id1, \alpha^\circ])$

$((id1, id2), [id1, id2])$

$((id1, id2), [id1, \beta])$

$((id1, id2), [\alpha, \alpha^\circ])$

$((id1, id2), [\alpha, id2])$

$((id1, id2), [\alpha, \beta])$

$((id1, id2), [\beta\alpha, \alpha^\circ])$

$((id1, id2), [\beta\alpha, id2])$

$((id1, id2), [\beta\alpha, \beta])$

2.3. Kombinationen mit $(id1, \beta)$

$((id1, \beta), (id1, \alpha^\circ))$

$((id1, \beta), (id1, id2))$

$((id1, \beta), (id1, \beta))$

$((id1, \beta), (\alpha, \alpha^\circ))$

$((id1, \beta), (\alpha, id2))$

$((id1, \beta), (\alpha, \beta))$

$((id1, \beta), (\beta\alpha, \alpha^\circ))$

$((id1, \beta), (\beta\alpha, id2))$

$((id1, \beta), (\beta\alpha, \beta))$

$((id1, \beta), (id1, \alpha^\circ])$

$((id1, \beta), (id1, id2])$

$((id1, \beta), (id1, \beta])$

$((id1, \beta), (\alpha, \alpha^\circ])$

$((id1, \beta), (\alpha, id2])$

$((id1, \beta), (\alpha, \beta])$

$((id1, \beta), (\beta\alpha, \alpha^\circ])$

$((id1, \beta), (\beta\alpha, id2])$

$((id1, \beta), (\beta\alpha, \beta])$

$((id1, \beta), [id1, \alpha^\circ))$

$((id1, \beta), [id1, id2))$

$((id1, \beta), [id1, \beta))$

$((id1, \beta), [\alpha, \alpha^\circ))$

$((id1, \beta), [\alpha, id2])$

$((id1, \beta), [\alpha, \beta])$

$((id1, \beta), [\beta\alpha, \alpha^\circ])$

$((id1, \beta), [\beta\alpha, id2])$

$((id1, \beta), [\beta\alpha, \beta])$

$((id1, \beta), [id1, \alpha^\circ])$

$((id1, \beta), [id1, id2])$

$((id1, \beta), [id1, \beta])$

$((id1, \beta), [\alpha, \alpha^\circ])$

$((id1, \beta), [\alpha, id2])$

$((id1, \beta), [\alpha, \beta])$

$((id1, \beta), [\beta\alpha, \alpha^\circ])$

$((id1, \beta), [\beta\alpha, id2])$

$((id1, \beta), [\beta\alpha, \beta])$

2.4. Kombinationen mit (α, α°)

$((\alpha, \alpha^\circ), (\text{id}1, \alpha^\circ))$

$((\alpha, \alpha^\circ), (\text{id}1, \text{id}2))$

$((\alpha, \alpha^\circ), (\text{id}1, \beta))$

$((\alpha, \alpha^\circ), (\alpha, \alpha^\circ))$

$((\alpha, \alpha^\circ), (\alpha, \text{id}2))$

$((\alpha, \alpha^\circ), (\alpha, \beta))$

$((\alpha, \alpha^\circ), (\beta\alpha, \alpha^\circ))$

$((\alpha, \alpha^\circ), (\beta\alpha, \text{id}2))$

$((\alpha, \alpha^\circ), (\beta\alpha, \beta))$

$((\alpha, \alpha^\circ), (\text{id}1, \alpha^\circ])$

$((\alpha, \alpha^\circ), (\text{id}1, \text{id}2])$

$((\alpha, \alpha^\circ), (\text{id}1, \beta])$

$((\alpha, \alpha^\circ), (\alpha, \alpha^\circ])$

$((\alpha, \alpha^\circ), (\alpha, \text{id}2])$

$((\alpha, \alpha^\circ), (\alpha, \beta])$

$((\alpha, \alpha^\circ), (\beta\alpha, \alpha^\circ])$

$((\alpha, \alpha^\circ), (\beta\alpha, \text{id}2])$

$((\alpha, \alpha^\circ), (\beta\alpha, \beta])$

$((\alpha, \alpha^\circ), [\text{id}1, \alpha^\circ))$

$((\alpha, \alpha^\circ), [\text{id}1, \text{id}2))$

$((\alpha, \alpha^\circ), [\text{id}1, \beta))$

$((\alpha, \alpha^\circ), [\alpha, \alpha^\circ))$

$((\alpha, \alpha^\circ), [\alpha, \text{id}_2])$

$((\alpha, \alpha^\circ), [\alpha, \beta])$

$((\alpha, \alpha^\circ), [\beta\alpha, \alpha^\circ])$

$((\alpha, \alpha^\circ), [\beta\alpha, \text{id}_2])$

$((\alpha, \alpha^\circ), [\beta\alpha, \beta])$

$((\alpha, \alpha^\circ), [\text{id}_1, \alpha^\circ])$

$((\alpha, \alpha^\circ), [\text{id}_1, \text{id}_2])$

$((\alpha, \alpha^\circ), [\text{id}_1, \beta])$

$((\alpha, \alpha^\circ), [\alpha, \alpha^\circ])$

$((\alpha, \alpha^\circ), [\alpha, \text{id}_2])$

$((\alpha, \alpha^\circ), [\alpha, \beta])$

$((\alpha, \alpha^\circ), [\beta\alpha, \alpha^\circ])$

$((\alpha, \alpha^\circ), [\beta\alpha, \text{id}_2])$

$((\alpha, \alpha^\circ), [\beta\alpha, \beta])$

2.5. Kombinationen mit (α, id_2)

$((\alpha, \text{id}_2), (\text{id}_1, \alpha^\circ))$

$((\alpha, \text{id}_2), (\text{id}_1, \text{id}_2))$

$((\alpha, \text{id}_2), (\text{id}_1, \beta))$

$((\alpha, \text{id}_2), (\alpha, \alpha^\circ))$

$((\alpha, \text{id}_2), (\alpha, \text{id}_2))$

$((\alpha, \text{id}_2), (\alpha, \beta))$

$((\alpha, \text{id}_2), (\beta\alpha, \alpha^\circ))$

$((\alpha, \text{id}_2), (\beta\alpha, \text{id}_2))$

$((\alpha, \text{id}_2), (\beta\alpha, \beta))$

$((\alpha, \text{id}_2), (\text{id}_1, \alpha^\circ])$

$((\alpha, \text{id}_2), (\text{id}_1, \text{id}_2])$

$((\alpha, \text{id}_2), (\text{id}_1, \beta])$

$((\alpha, \text{id}_2), (\alpha, \alpha^\circ])$

$((\alpha, \text{id}_2), (\alpha, \text{id}_2])$

$((\alpha, \text{id}_2), (\alpha, \beta])$

$((\alpha, \text{id}_2), (\beta\alpha, \alpha^\circ])$

$((\alpha, \text{id}_2), (\beta\alpha, \text{id}_2])$

$((\alpha, \text{id}_2), (\beta\alpha, \beta])$

$((\alpha, \text{id}_2), [\text{id}_1, \alpha^\circ))$

$((\alpha, \text{id}_2), [\text{id}_1, \text{id}_2))$

$((\alpha, \text{id}_2), [\text{id}_1, \beta))$

$((\alpha, \text{id}_2), [\alpha, \alpha^\circ))$

$((\alpha, \text{id}_2), [\alpha, \text{id}_2])$

$((\alpha, \text{id}_2), [\alpha, \beta])$

$((\alpha, \text{id}_2), [\beta\alpha, \alpha^\circ])$

$((\alpha, \text{id}_2), [\beta\alpha, \text{id}_2])$

$((\alpha, \text{id}_2), [\beta\alpha, \beta])$

$((\alpha, \text{id}_2), [\text{id}_1, \alpha^\circ])$

$((\alpha, \text{id}_2), [\text{id}_1, \text{id}_2])$

$((\alpha, \text{id}_2), [\text{id}_1, \beta])$

$((\alpha, \text{id}_2), [\alpha, \alpha^\circ])$

$((\alpha, \text{id}_2), [\alpha, \text{id}_2])$

$((\alpha, \text{id}_2), [\alpha, \beta])$

$((\alpha, \text{id}_2), [\beta\alpha, \alpha^\circ])$

$((\alpha, \text{id}_2), [\beta\alpha, \text{id}_2])$

$((\alpha, \text{id}_2), [\beta\alpha, \beta])$

2.6. Kombinationen mit (α, β)

$$((\alpha, \beta), (\text{id1}, \alpha^\circ))$$

$$((\alpha, \beta), (\text{id1}, \text{id2}))$$

$$((\alpha, \beta), (\text{id1}, \beta))$$

$$((\alpha, \beta), (\alpha, \alpha^\circ))$$

$$((\alpha, \beta), (\alpha, \text{id2}))$$

$$((\alpha, \beta), (\alpha, \beta))$$

$$((\alpha, \beta), (\beta\alpha, \alpha^\circ))$$

$$((\alpha, \beta), (\beta\alpha, \text{id2}))$$

$$((\alpha, \beta), (\beta\alpha, \beta))$$

$$((\alpha, \beta), (\text{id1}, \alpha^\circ])$$

$$((\alpha, \beta), (\text{id1}, \text{id2}])$$

$$((\alpha, \beta), (\text{id1}, \beta])$$

$$((\alpha, \beta), (\alpha, \alpha^\circ])$$

$$((\alpha, \beta), (\alpha, \text{id2}])$$

$$((\alpha, \beta), (\alpha, \beta])$$

$$((\alpha, \beta), (\beta\alpha, \alpha^\circ])$$

$$((\alpha, \beta), (\beta\alpha, \text{id2}])$$

$$((\alpha, \beta), (\beta\alpha, \beta])$$

$$((\alpha, \beta), [\text{id1}, \alpha^\circ))$$

$$((\alpha, \beta), [\text{id1}, \text{id2}))$$

$$((\alpha, \beta), [\text{id1}, \beta))$$

$$((\alpha, \beta), [\alpha, \alpha^\circ))$$

$((\alpha, \beta), [\alpha, \text{id}_2])$

$((\alpha, \beta), [\alpha, \beta])$

$((\alpha, \beta), [\beta\alpha, \alpha^\circ])$

$((\alpha, \beta), [\beta\alpha, \text{id}_2])$

$((\alpha, \beta), [\beta\alpha, \beta])$

$((\alpha, \beta), [\text{id}_1, \alpha^\circ])$

$((\alpha, \beta), [\text{id}_1, \text{id}_2])$

$((\alpha, \beta), [\text{id}_1, \beta])$

$((\alpha, \beta), [\alpha, \alpha^\circ])$

$((\alpha, \beta), [\alpha, \text{id}_2])$

$((\alpha, \beta), [\alpha, \beta])$

$((\alpha, \beta), [\beta\alpha, \alpha^\circ])$

$((\alpha, \beta), [\beta\alpha, \text{id}_2])$

$((\alpha, \beta), [\beta\alpha, \beta])$

2.7. Kombinationen mit $(\beta\alpha, \alpha^\circ)$

$((\beta\alpha, \alpha^\circ), (\text{id}1, \alpha^\circ))$

$((\beta\alpha, \alpha^\circ), (\text{id}1, \text{id}2))$

$((\beta\alpha, \alpha^\circ), (\text{id}1, \beta))$

$((\beta\alpha, \alpha^\circ), (\alpha, \alpha^\circ))$

$((\beta\alpha, \alpha^\circ), (\alpha, \text{id}2))$

$((\beta\alpha, \alpha^\circ), (\alpha, \beta))$

$((\beta\alpha, \alpha^\circ), (\beta\alpha, \alpha^\circ))$

$((\beta\alpha, \alpha^\circ), (\beta\alpha, \text{id}2))$

$((\beta\alpha, \alpha^\circ), (\beta\alpha, \beta))$

$((\beta\alpha, \alpha^\circ), (\text{id}1, \alpha^\circ])$

$((\beta\alpha, \alpha^\circ), (\text{id}1, \text{id}2])$

$((\beta\alpha, \alpha^\circ), (\text{id}1, \beta])$

$((\beta\alpha, \alpha^\circ), (\alpha, \alpha^\circ])$

$((\beta\alpha, \alpha^\circ), (\alpha, \text{id}2])$

$((\beta\alpha, \alpha^\circ), (\alpha, \beta])$

$((\beta\alpha, \alpha^\circ), (\beta\alpha, \alpha^\circ])$

$((\beta\alpha, \alpha^\circ), (\beta\alpha, \text{id}2])$

$((\beta\alpha, \alpha^\circ), (\beta\alpha, \beta])$

$((\beta\alpha, \alpha^\circ), [\text{id}1, \alpha^\circ))$

$((\beta\alpha, \alpha^\circ), [\text{id}1, \text{id}2))$

$((\beta\alpha, \alpha^\circ), [\text{id}1, \beta))$

$((\beta\alpha, \alpha^\circ), [\alpha, \alpha^\circ))$

$((\beta\alpha, \alpha^\circ), [\alpha, \text{id}_2])$

$((\beta\alpha, \alpha^\circ), [\alpha, \beta])$

$((\beta\alpha, \alpha^\circ), [\beta\alpha, \alpha^\circ])$

$((\beta\alpha, \alpha^\circ), [\beta\alpha, \text{id}_2])$

$((\beta\alpha, \alpha^\circ), [\beta\alpha, \beta])$

$((\beta\alpha, \alpha^\circ), [\text{id}_1, \alpha^\circ])$

$((\beta\alpha, \alpha^\circ), [\text{id}_1, \text{id}_2])$

$((\beta\alpha, \alpha^\circ), [\text{id}_1, \beta])$

$((\beta\alpha, \alpha^\circ), [\alpha, \alpha^\circ])$

$((\beta\alpha, \alpha^\circ), [\alpha, \text{id}_2])$

$((\beta\alpha, \alpha^\circ), [\alpha, \beta])$

$((\beta\alpha, \alpha^\circ), [\beta\alpha, \alpha^\circ])$

$((\beta\alpha, \alpha^\circ), [\beta\alpha, \text{id}_2])$

$((\beta\alpha, \alpha^\circ), [\beta\alpha, \beta])$

2.8. Kombinationen mit $(\beta\alpha, \text{id}_2)$

$((\beta\alpha, \text{id}_2), (\text{id}_1, \alpha^\circ))$

$((\beta\alpha, \text{id}_2), (\text{id}_1, \text{id}_2))$

$((\beta\alpha, \text{id}_2), (\text{id}_1, \beta))$

$((\beta\alpha, \text{id}_2), (\alpha, \alpha^\circ))$

$((\beta\alpha, \text{id}_2), (\alpha, \text{id}_2))$

$((\beta\alpha, \text{id}_2), (\alpha, \beta))$

$((\beta\alpha, \text{id}_2), (\beta\alpha, \alpha^\circ))$

$((\beta\alpha, \text{id}_2), (\beta\alpha, \text{id}_2))$

$((\beta\alpha, \text{id}_2), (\beta\alpha, \beta))$

$((\beta\alpha, \text{id}_2), (\text{id}_1, \alpha^\circ])$

$((\beta\alpha, \text{id}_2), (\text{id}_1, \text{id}_2])$

$((\beta\alpha, \text{id}_2), (\text{id}_1, \beta])$

$((\beta\alpha, \text{id}_2), (\alpha, \alpha^\circ])$

$((\beta\alpha, \text{id}_2), (\alpha, \text{id}_2])$

$((\beta\alpha, \text{id}_2), (\alpha, \beta])$

$((\beta\alpha, \text{id}_2), (\beta\alpha, \alpha^\circ])$

$((\beta\alpha, \text{id}_2), (\beta\alpha, \text{id}_2])$

$((\beta\alpha, \text{id}_2), (\beta\alpha, \beta])$

$((\beta\alpha, \text{id}_2), [\text{id}_1, \alpha^\circ))$

$((\beta\alpha, \text{id}_2), [\text{id}_1, \text{id}_2))$

$((\beta\alpha, \text{id}_2), [\text{id}_1, \beta))$

$((\beta\alpha, \text{id}_2), [\alpha, \alpha^\circ))$

$((\beta\alpha, \text{id}_2), [\alpha, \text{id}_2])$

$((\beta\alpha, \text{id}_2), [\alpha, \beta])$

$((\beta\alpha, \text{id}_2), [\beta\alpha, \alpha^\circ])$

$((\beta\alpha, \text{id}_2), [\beta\alpha, \text{id}_2])$

$((\beta\alpha, \text{id}_2), [\beta\alpha, \beta])$

$((\beta\alpha, \text{id}_2), [\text{id}_1, \alpha^\circ])$

$((\beta\alpha, \text{id}_2), [\text{id}_1, \text{id}_2])$

$((\beta\alpha, \text{id}_2), [\text{id}_1, \beta])$

$((\beta\alpha, \text{id}_2), [\alpha, \alpha^\circ])$

$((\beta\alpha, \text{id}_2), [\alpha, \text{id}_2])$

$((\beta\alpha, \text{id}_2), [\alpha, \beta])$

$((\beta\alpha, \text{id}_2), [\beta\alpha, \alpha^\circ])$

$((\beta\alpha, \text{id}_2), [\beta\alpha, \text{id}_2])$

$((\beta\alpha, \text{id}_2), [\beta\alpha, \beta])$

2.9. Kombinationen mit $(\beta\alpha, \beta)$

$((\beta\alpha, \beta), (\text{id}1, \alpha^\circ))$

$((\beta\alpha, \beta), (\text{id}1, \text{id}2))$

$((\beta\alpha, \beta), (\text{id}1, \beta))$

$((\beta\alpha, \beta), (\alpha, \alpha^\circ))$

$((\beta\alpha, \beta), (\alpha, \text{id}2))$

$((\beta\alpha, \beta), (\alpha, \beta))$

$((\beta\alpha, \beta), (\beta\alpha, \alpha^\circ))$

$((\beta\alpha, \beta), (\beta\alpha, \text{id}2))$

$((\beta\alpha, \beta), (\beta\alpha, \beta))$

$((\beta\alpha, \beta), (\text{id}1, \alpha^\circ])$

$((\beta\alpha, \beta), (\text{id}1, \text{id}2])$

$((\beta\alpha, \beta), (\text{id}1, \beta])$

$((\beta\alpha, \beta), (\alpha, \alpha^\circ])$

$((\beta\alpha, \beta), (\alpha, \text{id}2])$

$((\beta\alpha, \beta), (\alpha, \beta])$

$((\beta\alpha, \beta), (\beta\alpha, \alpha^\circ])$

$((\beta\alpha, \beta), (\beta\alpha, \text{id}2])$

$((\beta\alpha, \beta), (\beta\alpha, \beta])$

$((\beta\alpha, \beta), [\text{id}1, \alpha^\circ))$

$((\beta\alpha, \beta), [\text{id}1, \text{id}2))$

$((\beta\alpha, \beta), [\text{id}1, \beta))$

$((\beta\alpha, \beta), [\alpha, \alpha^\circ))$

$((\beta\alpha, \beta), [\alpha, \text{id}_2])$

$((\beta\alpha, \beta), [\alpha, \beta])$

$((\beta\alpha, \beta), [\beta\alpha, \alpha^\circ])$

$((\beta\alpha, \beta), [\beta\alpha, \text{id}_2])$

$((\beta\alpha, \beta), [\beta\alpha, \beta])$

$((\beta\alpha, \beta), [\text{id}_1, \alpha^\circ])$

$((\beta\alpha, \beta), [\text{id}_1, \text{id}_2])$

$((\beta\alpha, \beta), [\text{id}_1, \beta])$

$((\beta\alpha, \beta), [\alpha, \alpha^\circ])$

$((\beta\alpha, \beta), [\alpha, \text{id}_2])$

$((\beta\alpha, \beta), [\alpha, \beta])$

$((\beta\alpha, \beta), [\beta\alpha, \alpha^\circ])$

$((\beta\alpha, \beta), [\beta\alpha, \text{id}_2])$

$((\beta\alpha, \beta), [\beta\alpha, \beta])$

3. Halboffene (linksoffene) Zeichenkonnexe

3.1. Kombinationen mit $(id1, \alpha^\circ]$

$((id1, \alpha^\circ], (id1, \alpha^\circ))$

$((id1, \alpha^\circ], (id1, id2))$

$((id1, \alpha^\circ], (id1, \beta))$

$((id1, \alpha^\circ], (\alpha, \alpha^\circ))$

$((id1, \alpha^\circ], (\alpha, id2))$

$((id1, \alpha^\circ], (\alpha, \beta))$

$((id1, \alpha^\circ], (\beta\alpha, \alpha^\circ))$

$((id1, \alpha^\circ], (\beta\alpha, id2))$

$((id1, \alpha^\circ], (\beta\alpha, \beta))$

$((id1, \alpha^\circ], (id1, \alpha^\circ])$

$((id1, \alpha^\circ], (id1, id2])$

$((id1, \alpha^\circ], (id1, \beta])$

$((id1, \alpha^\circ], (\alpha, \alpha^\circ])$

$((id1, \alpha^\circ], (\alpha, id2])$

$((id1, \alpha^\circ], (\alpha, \beta])$

$((id1, \alpha^\circ], (\beta\alpha, \alpha^\circ])$

$((id1, \alpha^\circ], (\beta\alpha, id2])$

$((id1, \alpha^\circ], (\beta\alpha, \beta])$

$((id1, \alpha^\circ], [id1, \alpha^\circ))$

$((id1, \alpha^\circ], [id1, id2))$

$((id1, \alpha^\circ], [id1, \beta))$

$((\text{id1}, \alpha^\circ), [\alpha, \alpha^\circ])$
 $((\text{id1}, \alpha^\circ), [\alpha, \text{id2}])$
 $((\text{id1}, \alpha^\circ), [\alpha, \beta])$
 $((\text{id1}, \alpha^\circ), [\beta\alpha, \alpha^\circ])$
 $((\text{id1}, \alpha^\circ), [\beta\alpha, \text{id2}])$
 $((\text{id1}, \alpha^\circ), [\beta\alpha, \beta])$

$((\text{id1}, \alpha^\circ), [\text{id1}, \alpha^\circ])$
 $((\text{id1}, \alpha^\circ), [\text{id1}, \text{id2}])$
 $((\text{id1}, \alpha^\circ), [\text{id1}, \beta])$
 $((\text{id1}, \alpha^\circ), [\alpha, \alpha^\circ])$
 $((\text{id1}, \alpha^\circ), [\alpha, \text{id2}])$
 $((\text{id1}, \alpha^\circ), [\alpha, \beta])$
 $((\text{id1}, \alpha^\circ), [\beta\alpha, \alpha^\circ])$
 $((\text{id1}, \alpha^\circ), [\beta\alpha, \text{id2}])$
 $((\text{id1}, \alpha^\circ), [\beta\alpha, \beta])$

3.2. Kombinationen mit $(id1, id2]$

$((id1, id2], (id1, \alpha^\circ))$

$((id1, id2], (id1, id2))$

$((id1, id2], (id1, \beta))$

$((id1, id2], (\alpha, \alpha^\circ))$

$((id1, id2], (\alpha, id2))$

$((id1, id2], (\alpha, \beta))$

$((id1, id2], (\beta\alpha, \alpha^\circ))$

$((id1, id2], (\beta\alpha, id2))$

$((id1, id2], (\beta\alpha, \beta))$

$((id1, id2], (id1, \alpha^\circ])$

$((id1, id2], (id1, id2])$

$((id1, id2], (id1, \beta])$

$((id1, id2], (\alpha, \alpha^\circ])$

$((id1, id2], (\alpha, id2])$

$((id1, id2], (\alpha, \beta])$

$((id1, id2], (\beta\alpha, \alpha^\circ])$

$((id1, id2], (\beta\alpha, id2])$

$((id1, id2], (\beta\alpha, \beta])$

$((id1, id2], [id1, \alpha^\circ))$

$((id1, id2], [id1, id2))$

$((id1, id2], [id1, \beta))$

$((id1, id2], [\alpha, \alpha^\circ))$

$((id1, id2], [\alpha, id2])$

$((id1, id2], [\alpha, \beta])$

$((id1, id2], [\beta\alpha, \alpha^\circ])$

$((id1, id2], [\beta\alpha, id2])$

$((id1, id2], [\beta\alpha, \beta])$

$((id1, id2], [id1, \alpha^\circ])$

$((id1, id2], [id1, id2])$

$((id1, id2], [id1, \beta])$

$((id1, id2], [\alpha, \alpha^\circ])$

$((id1, id2], [\alpha, id2])$

$((id1, id2], [\alpha, \beta])$

$((id1, id2], [\beta\alpha, \alpha^\circ])$

$((id1, id2], [\beta\alpha, id2])$

$((id1, id2], [\beta\alpha, \beta])$

3.3. Kombinationen mit $(id1, \beta]$

$((id1, \beta], (id1, \alpha^\circ))$

$((id1, \beta], (id1, id2))$

$((id1, \beta], (id1, \beta))$

$((id1, \beta], (\alpha, \alpha^\circ))$

$((id1, \beta], (\alpha, id2))$

$((id1, \beta], (\alpha, \beta))$

$((id1, \beta], (\beta\alpha, \alpha^\circ))$

$((id1, \beta], (\beta\alpha, id2))$

$((id1, \beta], (\beta\alpha, \beta))$

$((id1, \beta], (id1, \alpha^\circ])$

$((id1, \beta], (id1, id2])$

$((id1, \beta], (id1, \beta])$

$((id1, \beta], (\alpha, \alpha^\circ])$

$((id1, \beta], (\alpha, id2])$

$((id1, \beta], (\alpha, \beta])$

$((id1, \beta], (\beta\alpha, \alpha^\circ])$

$((id1, \beta], (\beta\alpha, id2])$

$((id1, \beta], (\beta\alpha, \beta])$

$((id1, \beta], [id1, \alpha^\circ))$

$((id1, \beta], [id1, id2))$

$((id1, \beta], [id1, \beta))$

$((id1, \beta], [\alpha, \alpha^\circ))$

$((id1, \beta], [\alpha, id2))$

$((id1, \beta], [\alpha, \beta))$

$((id1, \beta], [\beta\alpha, \alpha^\circ))$

$((id1, \beta], [\beta\alpha, id2))$

$((id1, \beta], [\beta\alpha, \beta))$

$((id1, \beta], [id1, \alpha^\circ])$

$((id1, \beta], [id1, id2])$

$((id1, \beta], [id1, \beta])$

$((id1, \beta], [\alpha, \alpha^\circ])$

$((id1, \beta], [\alpha, id2])$

$((id1, \beta], [\alpha, \beta])$

$((id1, \beta], [\beta\alpha, \alpha^\circ])$

$((id1, \beta], [\beta\alpha, id2])$

$((id1, \beta], [\beta\alpha, \beta])$

3.4. Kombinationen mit $(\alpha, \alpha^\circ]$

$$((\alpha, \alpha^\circ], (\text{id}1, \alpha^\circ))$$

$$((\alpha, \alpha^\circ], (\text{id}1, \text{id}2))$$

$$((\alpha, \alpha^\circ], (\text{id}1, \beta))$$

$$((\alpha, \alpha^\circ], (\alpha, \alpha^\circ))$$

$$((\alpha, \alpha^\circ], (\alpha, \text{id}2))$$

$$((\alpha, \alpha^\circ], (\alpha, \beta))$$

$$((\alpha, \alpha^\circ], (\beta\alpha, \alpha^\circ))$$

$$((\alpha, \alpha^\circ], (\beta\alpha, \text{id}2))$$

$$((\alpha, \alpha^\circ], (\beta\alpha, \beta))$$

$$((\alpha, \alpha^\circ], (\text{id}1, \alpha^\circ])$$

$$((\alpha, \alpha^\circ], (\text{id}1, \text{id}2])$$

$$((\alpha, \alpha^\circ], (\text{id}1, \beta])$$

$$((\alpha, \alpha^\circ], (\alpha, \alpha^\circ])$$

$$((\alpha, \alpha^\circ], (\alpha, \text{id}2])$$

$$((\alpha, \alpha^\circ], (\alpha, \beta])$$

$$((\alpha, \alpha^\circ], (\beta\alpha, \alpha^\circ])$$

$$((\alpha, \alpha^\circ], (\beta\alpha, \text{id}2])$$

$$((\alpha, \alpha^\circ], (\beta\alpha, \beta])$$

$$((\alpha, \alpha^\circ], [\text{id}1, \alpha^\circ))$$

$$((\alpha, \alpha^\circ], [\text{id}1, \text{id}2))$$

$$((\alpha, \alpha^\circ], [\text{id}1, \beta))$$

$$((\alpha, \alpha^\circ], [\alpha, \alpha^\circ))$$

$((\alpha, \alpha^\circ), [\alpha, \text{id}_2])$

$((\alpha, \alpha^\circ), [\alpha, \beta])$

$((\alpha, \alpha^\circ), [\beta\alpha, \alpha^\circ])$

$((\alpha, \alpha^\circ), [\beta\alpha, \text{id}_2])$

$((\alpha, \alpha^\circ), [\beta\alpha, \beta])$

$((\alpha, \alpha^\circ), [\text{id}_1, \alpha^\circ])$

$((\alpha, \alpha^\circ), [\text{id}_1, \text{id}_2])$

$((\alpha, \alpha^\circ), [\text{id}_1, \beta])$

$((\alpha, \alpha^\circ), [\alpha, \alpha^\circ])$

$((\alpha, \alpha^\circ), [\alpha, \text{id}_2])$

$((\alpha, \alpha^\circ), [\alpha, \beta])$

$((\alpha, \alpha^\circ), [\beta\alpha, \alpha^\circ])$

$((\alpha, \alpha^\circ), [\beta\alpha, \text{id}_2])$

$((\alpha, \alpha^\circ), [\beta\alpha, \beta])$

3.5. Kombinationen mit $(\alpha, \text{id2}]$

$((\alpha, \text{id2}], (\text{id1}, \alpha^\circ))$

$((\alpha, \text{id2}], (\text{id1}, \text{id2}))$

$((\alpha, \text{id2}], (\text{id1}, \beta))$

$((\alpha, \text{id2}], (\alpha, \alpha^\circ))$

$((\alpha, \text{id2}], (\alpha, \text{id2}))$

$((\alpha, \text{id2}], (\alpha, \beta))$

$((\alpha, \text{id2}], (\beta\alpha, \alpha^\circ))$

$((\alpha, \text{id2}], (\beta\alpha, \text{id2}))$

$((\alpha, \text{id2}], (\beta\alpha, \beta))$

$((\alpha, \text{id2}], (\text{id1}, \alpha^\circ])$

$((\alpha, \text{id2}], (\text{id1}, \text{id2}])$

$((\alpha, \text{id2}], (\text{id1}, \beta])$

$((\alpha, \text{id2}], (\alpha, \alpha^\circ])$

$((\alpha, \text{id2}], (\alpha, \text{id2}])$

$((\alpha, \text{id2}], (\alpha, \beta])$

$((\alpha, \text{id2}], (\beta\alpha, \alpha^\circ])$

$((\alpha, \text{id2}], (\beta\alpha, \text{id2}])$

$((\alpha, \text{id2}], (\beta\alpha, \beta])$

$((\alpha, \text{id2}], [\text{id1}, \alpha^\circ))$

$((\alpha, \text{id2}], [\text{id1}, \text{id2}))$

$((\alpha, \text{id2}], [\text{id1}, \beta))$

$((\alpha, \text{id2}], [\alpha, \alpha^\circ))$

$((\alpha, \text{id}_2], [\alpha, \text{id}_2])$

$((\alpha, \text{id}_2], [\alpha, \beta])$

$((\alpha, \text{id}_2], [\beta\alpha, \alpha^\circ])$

$((\alpha, \text{id}_2], [\beta\alpha, \text{id}_2])$

$((\alpha, \text{id}_2], [\beta\alpha, \beta])$

$((\alpha, \text{id}_2], [\text{id}_1, \alpha^\circ])$

$((\alpha, \text{id}_2], [\text{id}_1, \text{id}_2])$

$((\alpha, \text{id}_2], [\text{id}_1, \beta])$

$((\alpha, \text{id}_2], [\alpha, \alpha^\circ])$

$((\alpha, \text{id}_2], [\alpha, \text{id}_2])$

$((\alpha, \text{id}_2], [\alpha, \beta])$

$((\alpha, \text{id}_2], [\beta\alpha, \alpha^\circ])$

$((\alpha, \text{id}_2], [\beta\alpha, \text{id}_2])$

$((\alpha, \text{id}_2], [\beta\alpha, \beta])$

3.6. Kombinationen mit $(\alpha, \beta]$

$((\alpha, \beta], (\text{id1}, \alpha^\circ))$

$((\alpha, \beta], (\text{id1}, \text{id2}))$

$((\alpha, \beta], (\text{id1}, \beta))$

$((\alpha, \beta], (\alpha, \alpha^\circ))$

$((\alpha, \beta], (\alpha, \text{id2}))$

$((\alpha, \beta], (\alpha, \beta))$

$((\alpha, \beta], (\beta\alpha, \alpha^\circ))$

$((\alpha, \beta], (\beta\alpha, \text{id2}))$

$((\alpha, \beta], (\beta\alpha, \beta))$

$((\alpha, \beta], (\text{id1}, \alpha^\circ])$

$((\alpha, \beta], (\text{id1}, \text{id2}])$

$((\alpha, \beta], (\text{id1}, \beta])$

$((\alpha, \beta], (\alpha, \alpha^\circ])$

$((\alpha, \beta], (\alpha, \text{id2}])$

$((\alpha, \beta], (\alpha, \beta])$

$((\alpha, \beta], (\beta\alpha, \alpha^\circ])$

$((\alpha, \beta], (\beta\alpha, \text{id2}])$

$((\alpha, \beta], (\beta\alpha, \beta])$

$((\alpha, \beta], [\text{id1}, \alpha^\circ))$

$((\alpha, \beta], [\text{id1}, \text{id2}))$

$((\alpha, \beta], [\text{id1}, \beta))$

$((\alpha, \beta], [\alpha, \alpha^\circ))$

$((\alpha, \beta], [\alpha, \text{id2}))$

$((\alpha, \beta], [\alpha, \beta))$

$((\alpha, \beta], [\beta\alpha, \alpha^\circ))$

$((\alpha, \beta], [\beta\alpha, \text{id2}))$

$((\alpha, \beta], [\beta\alpha, \beta))$

$((\alpha, \beta], [\text{id1}, \alpha^\circ])$

$((\alpha, \beta], [\text{id1}, \text{id2}])$

$((\alpha, \beta], [\text{id1}, \beta])$

$((\alpha, \beta], [\alpha, \alpha^\circ])$

$((\alpha, \beta], [\alpha, \text{id2}])$

$((\alpha, \beta], [\alpha, \beta])$

$((\alpha, \beta], [\beta\alpha, \alpha^\circ])$

$((\alpha, \beta], [\beta\alpha, \text{id2}])$

$((\alpha, \beta], [\beta\alpha, \beta])$

3.7. Kombinationen mit $(\beta\alpha, \alpha^\circ]$

$((\beta\alpha, \alpha^\circ], (\text{id1}, \alpha^\circ))$

$((\beta\alpha, \alpha^\circ], (\text{id1}, \text{id2}))$

$((\beta\alpha, \alpha^\circ], (\text{id1}, \beta))$

$((\beta\alpha, \alpha^\circ], (\alpha, \alpha^\circ))$

$((\beta\alpha, \alpha^\circ], (\alpha, \text{id2}))$

$((\beta\alpha, \alpha^\circ], (\alpha, \beta))$

$((\beta\alpha, \alpha^\circ], (\beta\alpha, \alpha^\circ))$

$((\beta\alpha, \alpha^\circ], (\beta\alpha, \text{id2}))$

$((\beta\alpha, \alpha^\circ], (\beta\alpha, \beta))$

$((\beta\alpha, \alpha^\circ], (\text{id1}, \alpha^\circ])$

$((\beta\alpha, \alpha^\circ], (\text{id1}, \text{id2}])$

$((\beta\alpha, \alpha^\circ], (\text{id1}, \beta])$

$((\beta\alpha, \alpha^\circ], (\alpha, \alpha^\circ])$

$((\beta\alpha, \alpha^\circ], (\alpha, \text{id2}])$

$((\beta\alpha, \alpha^\circ], (\alpha, \beta])$

$((\beta\alpha, \alpha^\circ], (\beta\alpha, \alpha^\circ])$

$((\beta\alpha, \alpha^\circ], (\beta\alpha, \text{id2}])$

$((\beta\alpha, \alpha^\circ], (\beta\alpha, \beta])$

$((\beta\alpha, \alpha^\circ], [\text{id1}, \alpha^\circ))$

$((\beta\alpha, \alpha^\circ], [\text{id1}, \text{id2}))$

$((\beta\alpha, \alpha^\circ], [\text{id1}, \beta))$

$((\beta\alpha, \alpha^\circ], [\alpha, \alpha^\circ))$

$((\beta\alpha, \alpha^\circ), [\alpha, \text{id}_2])$
 $((\beta\alpha, \alpha^\circ), [\alpha, \beta])$
 $((\beta\alpha, \alpha^\circ), [\beta\alpha, \alpha^\circ])$
 $((\beta\alpha, \alpha^\circ), [\beta\alpha, \text{id}_2])$
 $((\beta\alpha, \alpha^\circ), [\beta\alpha, \beta])$

$((\beta\alpha, \alpha^\circ), [\text{id}_1, \alpha^\circ])$
 $((\beta\alpha, \alpha^\circ), [\text{id}_1, \text{id}_2])$
 $((\beta\alpha, \alpha^\circ), [\text{id}_1, \beta])$
 $((\beta\alpha, \alpha^\circ), [\alpha, \alpha^\circ])$
 $((\beta\alpha, \alpha^\circ), [\alpha, \text{id}_2])$
 $((\beta\alpha, \alpha^\circ), [\alpha, \beta])$
 $((\beta\alpha, \alpha^\circ), [\beta\alpha, \alpha^\circ])$
 $((\beta\alpha, \alpha^\circ), [\beta\alpha, \text{id}_2])$
 $((\beta\alpha, \alpha^\circ), [\beta\alpha, \beta])$

3.8. Kombinationen mit $(\beta\alpha, \text{id}2]$

$((\beta\alpha, \text{id}2], (\text{id}1, \alpha^\circ))$

$((\beta\alpha, \text{id}2], (\text{id}1, \text{id}2))$

$((\beta\alpha, \text{id}2], (\text{id}1, \beta))$

$((\beta\alpha, \text{id}2], (\alpha, \alpha^\circ))$

$((\beta\alpha, \text{id}2], (\alpha, \text{id}2))$

$((\beta\alpha, \text{id}2], (\alpha, \beta))$

$((\beta\alpha, \text{id}2], (\beta\alpha, \alpha^\circ))$

$((\beta\alpha, \text{id}2], (\beta\alpha, \text{id}2))$

$((\beta\alpha, \text{id}2], (\beta\alpha, \beta))$

$((\beta\alpha, \text{id}2], (\text{id}1, \alpha^\circ])$

$((\beta\alpha, \text{id}2], (\text{id}1, \text{id}2])$

$((\beta\alpha, \text{id}2], (\text{id}1, \beta])$

$((\beta\alpha, \text{id}2], (\alpha, \alpha^\circ])$

$((\beta\alpha, \text{id}2], (\alpha, \text{id}2])$

$((\beta\alpha, \text{id}2], (\alpha, \beta])$

$((\beta\alpha, \text{id}2], (\beta\alpha, \alpha^\circ])$

$((\beta\alpha, \text{id}2], (\beta\alpha, \text{id}2])$

$((\beta\alpha, \text{id}2], (\beta\alpha, \beta])$

$((\beta\alpha, \text{id}2], [\text{id}1, \alpha^\circ))$

$((\beta\alpha, \text{id}2], [\text{id}1, \text{id}2))$

$((\beta\alpha, \text{id}2], [\text{id}1, \beta))$

$((\beta\alpha, \text{id}2], [\alpha, \alpha^\circ))$

$((\beta\alpha, \text{id}2], [\alpha, \text{id}2])$

$((\beta\alpha, \text{id}2], [\alpha, \beta])$

$((\beta\alpha, \text{id}2], [\beta\alpha, \alpha^\circ])$

$((\beta\alpha, \text{id}2], [\beta\alpha, \text{id}2])$

$((\beta\alpha, \text{id}2], [\beta\alpha, \beta])$

$((\beta\alpha, \text{id}2], [\text{id}1, \alpha^\circ])$

$((\beta\alpha, \text{id}2], [\text{id}1, \text{id}2])$

$((\beta\alpha, \text{id}2], [\text{id}1, \beta])$

$((\beta\alpha, \text{id}2], [\alpha, \alpha^\circ])$

$((\beta\alpha, \text{id}2], [\alpha, \text{id}2])$

$((\beta\alpha, \text{id}2], [\alpha, \beta])$

$((\beta\alpha, \text{id}2], [\beta\alpha, \alpha^\circ])$

$((\beta\alpha, \text{id}2], [\beta\alpha, \text{id}2])$

$((\beta\alpha, \text{id}2], [\beta\alpha, \beta])$

3.9. Kombinationen mit $(\beta\alpha, \beta]$

$((\beta\alpha, \beta], (\text{id}1, \alpha^\circ))$

$((\beta\alpha, \beta], (\text{id}1, \text{id}2))$

$((\beta\alpha, \beta], (\text{id}1, \beta))$

$((\beta\alpha, \beta], (\alpha, \alpha^\circ))$

$((\beta\alpha, \beta], (\alpha, \text{id}2))$

$((\beta\alpha, \beta], (\alpha, \beta))$

$((\beta\alpha, \beta], (\beta\alpha, \alpha^\circ))$

$((\beta\alpha, \beta], (\beta\alpha, \text{id}2))$

$((\beta\alpha, \beta], (\beta\alpha, \beta))$

$((\beta\alpha, \beta], (\text{id}1, \alpha^\circ])$

$((\beta\alpha, \beta], (\text{id}1, \text{id}2])$

$((\beta\alpha, \beta], (\text{id}1, \beta])$

$((\beta\alpha, \beta], (\alpha, \alpha^\circ])$

$((\beta\alpha, \beta], (\alpha, \text{id}2])$

$((\beta\alpha, \beta], (\alpha, \beta])$

$((\beta\alpha, \beta], (\beta\alpha, \alpha^\circ])$

$((\beta\alpha, \beta], (\beta\alpha, \text{id}2])$

$((\beta\alpha, \beta], (\beta\alpha, \beta])$

$((\beta\alpha, \beta], [\text{id}1, \alpha^\circ))$

$((\beta\alpha, \beta], [\text{id}1, \text{id}2))$

$((\beta\alpha, \beta], [\text{id}1, \beta))$

$((\beta\alpha, \beta], [\alpha, \alpha^\circ))$

$((\beta\alpha, \beta], [\alpha, \text{id2}])$

$((\beta\alpha, \beta], [\alpha, \beta])$

$((\beta\alpha, \beta], [\beta\alpha, \alpha^\circ])$

$((\beta\alpha, \beta], [\beta\alpha, \text{id2}])$

$((\beta\alpha, \beta], [\beta\alpha, \beta])$

$((\beta\alpha, \beta], [\text{id1}, \alpha^\circ])$

$((\beta\alpha, \beta], [\text{id1}, \text{id2}])$

$((\beta\alpha, \beta], [\text{id1}, \beta])$

$((\beta\alpha, \beta], [\alpha, \alpha^\circ])$

$((\beta\alpha, \beta], [\alpha, \text{id2}])$

$((\beta\alpha, \beta], [\alpha, \beta])$

$((\beta\alpha, \beta], [\beta\alpha, \alpha^\circ])$

$((\beta\alpha, \beta], [\beta\alpha, \text{id2}])$

$((\beta\alpha, \beta], [\beta\alpha, \beta])$

4. Halboffene (rechtsoffene) Zeichenkonnexe

4.1. Kombinationen mit $[\text{id1}, \alpha^\circ)$

$([\text{id1}, \alpha^\circ), (\text{id1}, \alpha^\circ))$

$([\text{id1}, \alpha^\circ), (\text{id1}, \text{id2}))$

$([\text{id1}, \alpha^\circ), (\text{id1}, \beta))$

$([\text{id1}, \alpha^\circ), (\alpha, \alpha^\circ))$

$([\text{id1}, \alpha^\circ), (\alpha, \text{id2}))$

$([\text{id1}, \alpha^\circ), (\alpha, \beta))$

$([\text{id1}, \alpha^\circ), (\beta\alpha, \alpha^\circ))$

$([\text{id1}, \alpha^\circ), (\beta\alpha, \text{id2}))$

$([\text{id1}, \alpha^\circ), (\beta\alpha, \beta))$

$([\text{id1}, \alpha^\circ], (\text{id1}, \alpha^\circ])$

$([\text{id1}, \alpha^\circ], (\text{id1}, \text{id2}])$

$([\text{id1}, \alpha^\circ], (\text{id1}, \beta])$

$([\text{id1}, \alpha^\circ], (\alpha, \alpha^\circ])$

$([\text{id1}, \alpha^\circ], (\alpha, \text{id2}])$

$([\text{id1}, \alpha^\circ], (\alpha, \beta])$

$([\text{id1}, \alpha^\circ], (\beta\alpha, \alpha^\circ])$

$([\text{id1}, \alpha^\circ], (\beta\alpha, \text{id2}])$

$([\text{id1}, \alpha^\circ], (\beta\alpha, \beta])$

$([\text{id1}, \alpha^\circ], [\text{id1}, \alpha^\circ))$

$([\text{id1}, \alpha^\circ], [\text{id1}, \text{id2}))$

$([\text{id1}, \alpha^\circ], [\text{id1}, \beta))$

$([\text{id1}, \alpha^\circ), [\alpha, \alpha^\circ))$
 $([\text{id1}, \alpha^\circ), [\alpha, \text{id2}))$
 $([\text{id1}, \alpha^\circ), [\alpha, \beta))$
 $([\text{id1}, \alpha^\circ), [\beta\alpha, \alpha^\circ))$
 $([\text{id1}, \alpha^\circ), [\beta\alpha, \text{id2}))$
 $([\text{id1}, \alpha^\circ), [\beta\alpha, \beta))$

$([\text{id1}, \alpha^\circ), [\text{id1}, \alpha^\circ])$
 $([\text{id1}, \alpha^\circ), [\text{id1}, \text{id2}])$
 $([\text{id1}, \alpha^\circ), [\text{id1}, \beta])$
 $([\text{id1}, \alpha^\circ), [\alpha, \alpha^\circ])$
 $([\text{id1}, \alpha^\circ), [\alpha, \text{id2}])$
 $([\text{id1}, \alpha^\circ), [\alpha, \beta])$
 $([\text{id1}, \alpha^\circ), [\beta\alpha, \alpha^\circ])$
 $([\text{id1}, \alpha^\circ), [\beta\alpha, \text{id2}])$
 $([\text{id1}, \alpha^\circ), [\beta\alpha, \beta])$

4.2. Kombinationen mit $[id1, id2]$

$([id1, id2], (id1, \alpha^\circ))$

$([id1, id2], (id1, id2))$

$([id1, id2], (id1, \beta))$

$([id1, id2], (\alpha, \alpha^\circ))$

$([id1, id2], (\alpha, id2))$

$([id1, id2], (\alpha, \beta))$

$([id1, id2], (\beta\alpha, \alpha^\circ))$

$([id1, id2], (\beta\alpha, id2))$

$([id1, id2], (\beta\alpha, \beta))$

$([id1, id2], (id1, \alpha^\circ])$

$([id1, id2], (id1, id2])$

$([id1, id2], (id1, \beta])$

$([id1, id2], (\alpha, \alpha^\circ])$

$([id1, id2], (\alpha, id2])$

$([id1, id2], (\alpha, \beta])$

$([id1, id2], (\beta\alpha, \alpha^\circ])$

$([id1, id2], (\beta\alpha, id2])$

$([id1, id2], (\beta\alpha, \beta])$

$([id1, id2], [id1, \alpha^\circ))$

$([id1, id2], [id1, id2))$

$([id1, id2], [id1, \beta))$

$([id1, id2], [\alpha, \alpha^\circ))$

$([id1, id2], [\alpha, id2])$

$([id1, id2], [\alpha, \beta])$

$([id1, id2], [\beta\alpha, \alpha^\circ])$

$([id1, id2], [\beta\alpha, id2])$

$([id1, id2], [\beta\alpha, \beta])$

$([id1, id2], [id1, \alpha^\circ])$

$([id1, id2], [id1, id2])$

$([id1, id2], [id1, \beta])$

$([id1, id2], [\alpha, \alpha^\circ])$

$([id1, id2], [\alpha, id2])$

$([id1, id2], [\alpha, \beta])$

$([id1, id2], [\beta\alpha, \alpha^\circ])$

$([id1, id2], [\beta\alpha, id2])$

$([id1, id2], [\beta\alpha, \beta])$

4.3. Kombinationen mit $[id1, \beta)$

$([id1, \beta), (id1, \alpha^\circ))$

$([id1, \beta), (id1, id2))$

$([id1, \beta), (id1, \beta))$

$([id1, \beta), (\alpha, \alpha^\circ))$

$([id1, \beta), (\alpha, id2))$

$([id1, \beta), (\alpha, \beta))$

$([id1, \beta), (\beta\alpha, \alpha^\circ))$

$([id1, \beta), (\beta\alpha, id2))$

$([id1, \beta), (\beta\alpha, \beta))$

$([id1, \beta), (id1, \alpha^\circ])$

$([id1, \beta), (id1, id2])$

$([id1, \beta), (id1, \beta])$

$([id1, \beta), (\alpha, \alpha^\circ])$

$([id1, \beta), (\alpha, id2])$

$([id1, \beta), (\alpha, \beta])$

$([id1, \beta), (\beta\alpha, \alpha^\circ])$

$([id1, \beta), (\beta\alpha, id2])$

$([id1, \beta), (\beta\alpha, \beta])$

$([id1, \beta), [id1, \alpha^\circ))$

$([id1, \beta), [id1, id2))$

$([id1, \beta), [id1, \beta))$

$([id1, \beta), [\alpha, \alpha^\circ))$

$([id1, \beta], [\alpha, id2])$

$([id1, \beta], [\alpha, \beta])$

$([id1, \beta], [\beta\alpha, \alpha^\circ])$

$([id1, \beta], [\beta\alpha, id2])$

$([id1, \beta], [\beta\alpha, \beta])$

$([id1, \beta], [id1, \alpha^\circ])$

$([id1, \beta], [id1, id2])$

$([id1, \beta], [id1, \beta])$

$([id1, \beta], [\alpha, \alpha^\circ])$

$([id1, \beta], [\alpha, id2])$

$([id1, \beta], [\alpha, \beta])$

$([id1, \beta], [\beta\alpha, \alpha^\circ])$

$([id1, \beta], [\beta\alpha, id2])$

$([id1, \beta], [\beta\alpha, \beta])$

4.4. Kombinationen mit $[\alpha, \alpha^\circ]$

$([\alpha, \alpha^\circ], (\text{id1}, \alpha^\circ))$

$([\alpha, \alpha^\circ], (\text{id1}, \text{id2}))$

$([\alpha, \alpha^\circ], (\text{id1}, \beta))$

$([\alpha, \alpha^\circ], (\alpha, \alpha^\circ))$

$([\alpha, \alpha^\circ], (\alpha, \text{id2}))$

$([\alpha, \alpha^\circ], (\alpha, \beta))$

$([\alpha, \alpha^\circ], (\beta\alpha, \alpha^\circ))$

$([\alpha, \alpha^\circ], (\beta\alpha, \text{id2}))$

$([\alpha, \alpha^\circ], (\beta\alpha, \beta))$

$([\alpha, \alpha^\circ], (\text{id1}, \alpha])$

$([\alpha, \alpha^\circ], (\text{id1}, \text{id2}])$

$([\alpha, \alpha^\circ], (\text{id1}, \beta])$

$([\alpha, \alpha^\circ], (\alpha, \alpha])$

$([\alpha, \alpha^\circ], (\alpha, \text{id2}])$

$([\alpha, \alpha^\circ], (\alpha, \beta])$

$([\alpha, \alpha^\circ], (\beta\alpha, \alpha])$

$([\alpha, \alpha^\circ], (\beta\alpha, \text{id2}])$

$([\alpha, \alpha^\circ], (\beta\alpha, \beta])$

$([\alpha, \alpha^\circ], [\text{id1}, \alpha^\circ])$

$([\alpha, \alpha^\circ], [\text{id1}, \text{id2}])$

$([\alpha, \alpha^\circ], [\text{id1}, \beta])$

$([\alpha, \alpha^\circ], [\alpha, \alpha^\circ])$

$([\alpha, \alpha^\circ), [\alpha, \text{id}_2])$

$([\alpha, \alpha^\circ), [\alpha, \beta])$

$([\alpha, \alpha^\circ), [\beta\alpha, \alpha^\circ])$

$([\alpha, \alpha^\circ), [\beta\alpha, \text{id}_2])$

$([\alpha, \alpha^\circ), [\beta\alpha, \beta])$

$([\alpha, \alpha^\circ), [\text{id}_1, \alpha^\circ])$

$([\alpha, \alpha^\circ), [\text{id}_1, \text{id}_2])$

$([\alpha, \alpha^\circ), [\text{id}_1, \beta])$

$([\alpha, \alpha^\circ), [\alpha, \alpha^\circ])$

$([\alpha, \alpha^\circ), [\alpha, \text{id}_2])$

$([\alpha, \alpha^\circ), [\alpha, \beta])$

$([\alpha, \alpha^\circ), [\beta\alpha, \alpha^\circ])$

$([\alpha, \alpha^\circ), [\beta\alpha, \text{id}_2])$

$([\alpha, \alpha^\circ), [\beta\alpha, \beta])$

4.5. Kombinationen mit $[\alpha, \text{id}2]$

$([\alpha, \text{id}2], (\text{id}1, \alpha^\circ))$

$([\alpha, \text{id}2], (\text{id}1, \text{id}2))$

$([\alpha, \text{id}2], (\text{id}1, \beta))$

$([\alpha, \text{id}2], (\alpha, \alpha^\circ))$

$([\alpha, \text{id}2], (\alpha, \text{id}2))$

$([\alpha, \text{id}2], (\alpha, \beta))$

$([\alpha, \text{id}2], (\beta\alpha, \alpha^\circ))$

$([\alpha, \text{id}2], (\beta\alpha, \text{id}2))$

$([\alpha, \text{id}2], (\beta\alpha, \beta))$

$([\alpha, \text{id}2], (\text{id}1, \alpha^\circ])$

$([\alpha, \text{id}2], (\text{id}1, \text{id}2])$

$([\alpha, \text{id}2], (\text{id}1, \beta])$

$([\alpha, \text{id}2], (\alpha, \alpha^\circ])$

$([\alpha, \text{id}2], (\alpha, \text{id}2])$

$([\alpha, \text{id}2], (\alpha, \beta])$

$([\alpha, \text{id}2], (\beta\alpha, \alpha^\circ])$

$([\alpha, \text{id}2], (\beta\alpha, \text{id}2])$

$([\alpha, \text{id}2], (\beta\alpha, \beta])$

$([\alpha, \text{id}2], [\text{id}1, \alpha^\circ))$

$([\alpha, \text{id}2], [\text{id}1, \text{id}2))$

$([\alpha, \text{id}2], [\text{id}1, \beta))$

$([\alpha, \text{id}2], [\alpha, \alpha^\circ))$

$([\alpha, \text{id}_2], [\alpha, \text{id}_2])$

$([\alpha, \text{id}_2], [\alpha, \beta])$

$([\alpha, \text{id}_2], [\beta\alpha, \alpha^\circ])$

$([\alpha, \text{id}_2], [\beta\alpha, \text{id}_2])$

$([\alpha, \text{id}_2], [\beta\alpha, \beta])$

$([\alpha, \text{id}_2], [\text{id}_1, \alpha^\circ])$

$([\alpha, \text{id}_2], [\text{id}_1, \text{id}_2])$

$([\alpha, \text{id}_2], [\text{id}_1, \beta])$

$([\alpha, \text{id}_2], [\alpha, \alpha^\circ])$

$([\alpha, \text{id}_2], [\alpha, \text{id}_2])$

$([\alpha, \text{id}_2], [\alpha, \beta])$

$([\alpha, \text{id}_2], [\beta\alpha, \alpha^\circ])$

$([\alpha, \text{id}_2], [\beta\alpha, \text{id}_2])$

$([\alpha, \text{id}_2], [\beta\alpha, \beta])$

4.6. Kombinationen mit $[\alpha, \beta)$

$([\alpha, \beta), (\text{id1}, \alpha^\circ))$

$([\alpha, \beta), (\text{id1}, \text{id2}))$

$([\alpha, \beta), (\text{id1}, \beta))$

$([\alpha, \beta), (\alpha, \alpha^\circ))$

$([\alpha, \beta), (\alpha, \text{id2}))$

$([\alpha, \beta), (\alpha, \beta))$

$([\alpha, \beta), (\beta\alpha, \alpha^\circ))$

$([\alpha, \beta), (\beta\alpha, \text{id2}))$

$([\alpha, \beta), (\beta\alpha, \beta))$

$([\alpha, \beta], (\text{id1}, \alpha^\circ])$

$([\alpha, \beta], (\text{id1}, \text{id2}])$

$([\alpha, \beta], (\text{id1}, \beta])$

$([\alpha, \beta], (\alpha, \alpha^\circ])$

$([\alpha, \beta], (\alpha, \text{id2}])$

$([\alpha, \beta], (\alpha, \beta])$

$([\alpha, \beta], (\beta\alpha, \alpha^\circ])$

$([\alpha, \beta], (\beta\alpha, \text{id2}])$

$([\alpha, \beta], (\beta\alpha, \beta])$

$([\alpha, \beta), [\text{id1}, \alpha^\circ))$

$([\alpha, \beta), [\text{id1}, \text{id2}))$

$([\alpha, \beta), [\text{id1}, \beta))$

$([\alpha, \beta), [\alpha, \alpha^\circ))$

$([\alpha, \beta], [\alpha, \text{id}_2])$

$([\alpha, \beta], [\alpha, \beta])$

$([\alpha, \beta], [\beta\alpha, \alpha^\circ])$

$([\alpha, \beta], [\beta\alpha, \text{id}_2])$

$([\alpha, \beta], [\beta\alpha, \beta])$

$([\alpha, \beta], [\text{id}_1, \alpha^\circ])$

$([\alpha, \beta], [\text{id}_1, \text{id}_2])$

$([\alpha, \beta], [\text{id}_1, \beta])$

$([\alpha, \beta], [\alpha, \alpha^\circ])$

$([\alpha, \beta], [\alpha, \text{id}_2])$

$([\alpha, \beta], [\alpha, \beta])$

$([\alpha, \beta], [\beta\alpha, \alpha^\circ])$

$([\alpha, \beta], [\beta\alpha, \text{id}_2])$

$([\alpha, \beta], [\beta\alpha, \beta])$

4.7. Kombinationen mit $[\beta\alpha, \alpha^\circ]$

$([\beta\alpha, \alpha^\circ], (\text{id1}, \alpha^\circ))$

$([\beta\alpha, \alpha^\circ], (\text{id1}, \text{id2}))$

$([\beta\alpha, \alpha^\circ], (\text{id1}, \beta))$

$([\beta\alpha, \alpha^\circ], (\alpha, \alpha^\circ))$

$([\beta\alpha, \alpha^\circ], (\alpha, \text{id2}))$

$([\beta\alpha, \alpha^\circ], (\alpha, \beta))$

$([\beta\alpha, \alpha^\circ], (\beta\alpha, \alpha^\circ))$

$([\beta\alpha, \alpha^\circ], (\beta\alpha, \text{id2}))$

$([\beta\alpha, \alpha^\circ], (\beta\alpha, \beta))$

$([\beta\alpha, \alpha^\circ], (\text{id1}, \alpha^\circ])$

$([\beta\alpha, \alpha^\circ], (\text{id1}, \text{id2}])$

$([\beta\alpha, \alpha^\circ], (\text{id1}, \beta])$

$([\beta\alpha, \alpha^\circ], (\alpha, \alpha^\circ])$

$([\beta\alpha, \alpha^\circ], (\alpha, \text{id2}])$

$([\beta\alpha, \alpha^\circ], (\alpha, \beta])$

$([\beta\alpha, \alpha^\circ], (\beta\alpha, \alpha^\circ])$

$([\beta\alpha, \alpha^\circ], (\beta\alpha, \text{id2}])$

$([\beta\alpha, \alpha^\circ], (\beta\alpha, \beta])$

$([\beta\alpha, \alpha^\circ], [\text{id1}, \alpha^\circ])$

$([\beta\alpha, \alpha^\circ], [\text{id1}, \text{id2}])$

$([\beta\alpha, \alpha^\circ], [\text{id1}, \beta])$

$([\beta\alpha, \alpha^\circ], [\alpha, \alpha^\circ])$

$([\beta\alpha, \alpha^\circ], [\alpha, \text{id}_2])$

$([\beta\alpha, \alpha^\circ], [\alpha, \beta])$

$([\beta\alpha, \alpha^\circ], [\beta\alpha, \alpha^\circ])$

$([\beta\alpha, \alpha^\circ], [\beta\alpha, \text{id}_2])$

$([\beta\alpha, \alpha^\circ], [\beta\alpha, \beta])$

$([\beta\alpha, \alpha^\circ], [\text{id}_1, \alpha^\circ])$

$([\beta\alpha, \alpha^\circ], [\text{id}_1, \text{id}_2])$

$([\beta\alpha, \alpha^\circ], [\text{id}_1, \beta])$

$([\beta\alpha, \alpha^\circ], [\alpha, \alpha^\circ])$

$([\beta\alpha, \alpha^\circ], [\alpha, \text{id}_2])$

$([\beta\alpha, \alpha^\circ], [\alpha, \beta])$

$([\beta\alpha, \alpha^\circ], [\beta\alpha, \alpha^\circ])$

$([\beta\alpha, \alpha^\circ], [\beta\alpha, \text{id}_2])$

$([\beta\alpha, \alpha^\circ], [\beta\alpha, \beta])$

4.8. Kombinationen mit $[\beta\alpha, \text{id}2]$

$([\beta\alpha, \text{id}2], (\text{id}1, \alpha^\circ))$

$([\beta\alpha, \text{id}2], (\text{id}1, \text{id}2))$

$([\beta\alpha, \text{id}2], (\text{id}1, \beta))$

$([\beta\alpha, \text{id}2], (\alpha, \alpha^\circ))$

$([\beta\alpha, \text{id}2], (\alpha, \text{id}2))$

$([\beta\alpha, \text{id}2], (\alpha, \beta))$

$([\beta\alpha, \text{id}2], (\beta\alpha, \alpha^\circ))$

$([\beta\alpha, \text{id}2], (\beta\alpha, \text{id}2))$

$([\beta\alpha, \text{id}2], (\beta\alpha, \beta))$

$([\beta\alpha, \text{id}2], (\text{id}1, \alpha^\circ])$

$([\beta\alpha, \text{id}2], (\text{id}1, \text{id}2])$

$([\beta\alpha, \text{id}2], (\text{id}1, \beta])$

$([\beta\alpha, \text{id}2], (\alpha, \alpha^\circ])$

$([\beta\alpha, \text{id}2], (\alpha, \text{id}2])$

$([\beta\alpha, \text{id}2], (\alpha, \beta])$

$([\beta\alpha, \text{id}2], (\beta\alpha, \alpha^\circ])$

$([\beta\alpha, \text{id}2], (\beta\alpha, \text{id}2])$

$([\beta\alpha, \text{id}2], (\beta\alpha, \beta])$

$([\beta\alpha, \text{id}2], [\text{id}1, \alpha^\circ])$

$([\beta\alpha, \text{id}2], [\text{id}1, \text{id}2])$

$([\beta\alpha, \text{id}2], [\text{id}1, \beta])$

$([\beta\alpha, \text{id}2], [\alpha, \alpha^\circ])$

$([\beta\alpha, \text{id}_2], [\alpha, \text{id}_2])$

$([\beta\alpha, \text{id}_2], [\alpha, \beta])$

$([\beta\alpha, \text{id}_2], [\beta\alpha, \alpha^\circ])$

$([\beta\alpha, \text{id}_2], [\beta\alpha, \text{id}_2])$

$([\beta\alpha, \text{id}_2], [\beta\alpha, \beta])$

$([\beta\alpha, \text{id}_2], [\text{id}_1, \alpha^\circ])$

$([\beta\alpha, \text{id}_2], [\text{id}_1, \text{id}_2])$

$([\beta\alpha, \text{id}_2], [\text{id}_1, \beta])$

$([\beta\alpha, \text{id}_2], [\alpha, \alpha^\circ])$

$([\beta\alpha, \text{id}_2], [\alpha, \text{id}_2])$

$([\beta\alpha, \text{id}_2], [\alpha, \beta])$

$([\beta\alpha, \text{id}_2], [\beta\alpha, \alpha^\circ])$

$([\beta\alpha, \text{id}_2], [\beta\alpha, \text{id}_2])$

$([\beta\alpha, \text{id}_2], [\beta\alpha, \beta])$

4.9. Kombinationen mit $[\beta\alpha, \beta]$

$([\beta\alpha, \beta], (\text{id1}, \alpha^\circ))$

$([\beta\alpha, \beta], (\text{id1}, \text{id2}))$

$([\beta\alpha, \beta], (\text{id1}, \beta))$

$([\beta\alpha, \beta], (\alpha, \alpha^\circ))$

$([\beta\alpha, \beta], (\alpha, \text{id2}))$

$([\beta\alpha, \beta], (\alpha, \beta))$

$([\beta\alpha, \beta], (\beta\alpha, \alpha^\circ))$

$([\beta\alpha, \beta], (\beta\alpha, \text{id2}))$

$([\beta\alpha, \beta], (\beta\alpha, \beta))$

$([\beta\alpha, \beta], (\text{id1}, \alpha^\circ])$

$([\beta\alpha, \beta], (\text{id1}, \text{id2}])$

$([\beta\alpha, \beta], (\text{id1}, \beta])$

$([\beta\alpha, \beta], (\alpha, \alpha^\circ])$

$([\beta\alpha, \beta], (\alpha, \text{id2}])$

$([\beta\alpha, \beta], (\alpha, \beta])$

$([\beta\alpha, \beta], (\beta\alpha, \alpha^\circ])$

$([\beta\alpha, \beta], (\beta\alpha, \text{id2}])$

$([\beta\alpha, \beta], (\beta\alpha, \beta])$

$([\beta\alpha, \beta], [\text{id1}, \alpha^\circ])$

$([\beta\alpha, \beta], [\text{id1}, \text{id2}])$

$([\beta\alpha, \beta], [\text{id1}, \beta])$

$([\beta\alpha, \beta], [\alpha, \alpha^\circ])$

$([\beta\alpha, \beta], [\alpha, \text{id}_2])$

$([\beta\alpha, \beta], [\alpha, \beta])$

$([\beta\alpha, \beta], [\beta\alpha, \alpha^\circ])$

$([\beta\alpha, \beta], [\beta\alpha, \text{id}_2])$

$([\beta\alpha, \beta], [\beta\alpha, \beta])$

$([\beta\alpha, \beta], [\text{id}_1, \alpha^\circ])$

$([\beta\alpha, \beta], [\text{id}_1, \text{id}_2])$

$([\beta\alpha, \beta], [\text{id}_1, \beta])$

$([\beta\alpha, \beta], [\alpha, \alpha^\circ])$

$([\beta\alpha, \beta], [\alpha, \text{id}_2])$

$([\beta\alpha, \beta], [\alpha, \beta])$

$([\beta\alpha, \beta], [\beta\alpha, \alpha^\circ])$

$([\beta\alpha, \beta], [\beta\alpha, \text{id}_2])$

$([\beta\alpha, \beta], [\beta\alpha, \beta])$

5. Abgeschlossene Zeichenkonnexe

5.1. Kombinationen mit $[\text{id1}, \alpha^\circ]$

$([\text{id1}, \alpha^\circ], (\text{id1}, \alpha^\circ))$

$([\text{id1}, \alpha^\circ], (\text{id1}, \text{id2}))$

$([\text{id1}, \alpha^\circ], (\text{id1}, \beta))$

$([\text{id1}, \alpha^\circ], (\alpha, \alpha^\circ))$

$([\text{id1}, \alpha^\circ], (\alpha, \text{id2}))$

$([\text{id1}, \alpha^\circ], (\alpha, \beta))$

$([\text{id1}, \alpha^\circ], (\beta\alpha, \alpha^\circ))$

$([\text{id1}, \alpha^\circ], (\beta\alpha, \text{id2}))$

$([\text{id1}, \alpha^\circ], (\beta\alpha, \beta))$

$([\text{id1}, \alpha^\circ], (\text{id1}, \alpha^\circ])$

$([\text{id1}, \alpha^\circ], (\text{id1}, \text{id2}])$

$([\text{id1}, \alpha^\circ], (\text{id1}, \beta])$

$([\text{id1}, \alpha^\circ], (\alpha, \alpha^\circ])$

$([\text{id1}, \alpha^\circ], (\alpha, \text{id2}])$

$([\text{id1}, \alpha^\circ], (\alpha, \beta])$

$([\text{id1}, \alpha^\circ], (\beta\alpha, \alpha^\circ])$

$([\text{id1}, \alpha^\circ], (\beta\alpha, \text{id2}])$

$([\text{id1}, \alpha^\circ], (\beta\alpha, \beta])$

$([\text{id1}, \alpha^\circ], [\text{id1}, \alpha^\circ])$

$([\text{id1}, \alpha^\circ], [\text{id1}, \text{id2}])$

$([\text{id1}, \alpha^\circ], [\text{id1}, \beta])$

$([id1, \alpha^\circ], [\alpha, \alpha^\circ])$
 $([id1, \alpha^\circ], [\alpha, id2])$
 $([id1, \alpha^\circ], [\alpha, \beta])$
 $([id1, \alpha^\circ], [\beta\alpha, \alpha^\circ])$
 $([id1, \alpha^\circ], [\beta\alpha, id2])$
 $([id1, \alpha^\circ], [\beta\alpha, \beta])$

$([id1, \alpha^\circ], [id1, \alpha^\circ])$
 $([id1, \alpha^\circ], [id1, id2])$
 $([id1, \alpha^\circ], [id1, \beta])$
 $([id1, \alpha^\circ], [\alpha, \alpha^\circ])$
 $([id1, \alpha^\circ], [\alpha, id2])$
 $([id1, \alpha^\circ], [\alpha, \beta])$
 $([id1, \alpha^\circ], [\beta\alpha, \alpha^\circ])$
 $([id1, \alpha^\circ], [\beta\alpha, id2])$
 $([id1, \alpha^\circ], [\beta\alpha, \beta])$

5.2. Kombinationen mit $[id1, id2]$

$([id1, id2], (id1, \alpha^\circ))$

$([id1, id2], (id1, id2))$

$([id1, id2], (id1, \beta))$

$([id1, id2], (\alpha, \alpha^\circ))$

$([id1, id2], (\alpha, id2))$

$([id1, id2], (\alpha, \beta))$

$([id1, id2], (\beta\alpha, \alpha^\circ))$

$([id1, id2], (\beta\alpha, id2))$

$([id1, id2], (\beta\alpha, \beta))$

$([id1, id2], (id1, \alpha^\circ])$

$([id1, id2], (id1, id2])$

$([id1, id2], (id1, \beta])$

$([id1, id2], (\alpha, \alpha^\circ])$

$([id1, id2], (\alpha, id2])$

$([id1, id2], (\alpha, \beta])$

$([id1, id2], (\beta\alpha, \alpha^\circ])$

$([id1, id2], (\beta\alpha, id2])$

$([id1, id2], (\beta\alpha, \beta])$

$([id1, id2], [id1, \alpha^\circ))$

$([id1, id2], [id1, id2))$

$([id1, id2], [id1, \beta))$

$([id1, id2], [\alpha, \alpha^\circ))$

$([id1, id2], [\alpha, id2])$

$([id1, id2], [\alpha, \beta])$

$([id1, id2], [\beta\alpha, \alpha^\circ])$

$([id1, id2], [\beta\alpha, id2])$

$([id1, id2], [\beta\alpha, \beta])$

$([id1, id2], [id1, \alpha^\circ])$

$([id1, id2], [id1, id2])$

$([id1, id2], [id1, \beta])$

$([id1, id2], [\alpha, \alpha^\circ])$

$([id1, id2], [\alpha, id2])$

$([id1, id2], [\alpha, \beta])$

$([id1, id2], [\beta\alpha, \alpha^\circ])$

$([id1, id2], [\beta\alpha, id2])$

$([id1, id2], [\beta\alpha, \beta])$

5.3. Kombinationen mit $[\text{id1}, \beta]$

$([\text{id1}, \beta], (\text{id1}, \alpha^\circ))$

$([\text{id1}, \beta], (\text{id1}, \text{id2}))$

$([\text{id1}, \beta], (\text{id1}, \beta))$

$([\text{id1}, \beta], (\alpha, \alpha^\circ))$

$([\text{id1}, \beta], (\alpha, \text{id2}))$

$([\text{id1}, \beta], (\alpha, \beta))$

$([\text{id1}, \beta], (\beta\alpha, \alpha^\circ))$

$([\text{id1}, \beta], (\beta\alpha, \text{id2}))$

$([\text{id1}, \beta], (\beta\alpha, \beta))$

$([\text{id1}, \beta], (\text{id1}, \alpha^\circ])$

$([\text{id1}, \beta], (\text{id1}, \text{id2}])$

$([\text{id1}, \beta], (\text{id1}, \beta])$

$([\text{id1}, \beta], (\alpha, \alpha^\circ])$

$([\text{id1}, \beta], (\alpha, \text{id2}])$

$([\text{id1}, \beta], (\alpha, \beta])$

$([\text{id1}, \beta], (\beta\alpha, \alpha^\circ])$

$([\text{id1}, \beta], (\beta\alpha, \text{id2}])$

$([\text{id1}, \beta], (\beta\alpha, \beta])$

$([\text{id1}, \beta], [\text{id1}, \alpha^\circ])$

$([\text{id1}, \beta], [\text{id1}, \text{id2}])$

$([\text{id1}, \beta], [\text{id1}, \beta])$

$([\text{id1}, \beta], [\alpha, \alpha^\circ])$

$([id1, \beta], [\alpha, id2])$

$([id1, \beta], [\alpha, \beta])$

$([id1, \beta], [\beta\alpha, \alpha^\circ])$

$([id1, \beta], [\beta\alpha, id2])$

$([id1, \beta], [\beta\alpha, \beta])$

$([id1, \beta], [id1, \alpha^\circ])$

$([id1, \beta], [id1, id2])$

$([id1, \beta], [id1, \beta])$

$([id1, \beta], [\alpha, \alpha^\circ])$

$([id1, \beta], [\alpha, id2])$

$([id1, \beta], [\alpha, \beta])$

$([id1, \beta], [\beta\alpha, \alpha^\circ])$

$([id1, \beta], [\beta\alpha, id2])$

$([id1, \beta], [\beta\alpha, \beta])$

5.4. Kombinationen mit $[\alpha, \alpha^\circ]$

$([\alpha, \alpha^\circ], (\text{id1}, \alpha^\circ))$

$([\alpha, \alpha^\circ], (\text{id1}, \text{id2}))$

$([\alpha, \alpha^\circ], (\text{id1}, \beta))$

$([\alpha, \alpha^\circ], (\alpha, \alpha^\circ))$

$([\alpha, \alpha^\circ], (\alpha, \text{id2}))$

$([\alpha, \alpha^\circ], (\alpha, \beta))$

$([\alpha, \alpha^\circ], (\beta\alpha, \alpha^\circ))$

$([\alpha, \alpha^\circ], (\beta\alpha, \text{id2}))$

$([\alpha, \alpha^\circ], (\beta\alpha, \beta))$

$([\alpha, \alpha^\circ], (\text{id1}, \alpha])$

$([\alpha, \alpha^\circ], (\text{id1}, \text{id2}])$

$([\alpha, \alpha^\circ], (\text{id1}, \beta])$

$([\alpha, \alpha^\circ], (\alpha, \alpha])$

$([\alpha, \alpha^\circ], (\alpha, \text{id2}])$

$([\alpha, \alpha^\circ], (\alpha, \beta])$

$([\alpha, \alpha^\circ], (\beta\alpha, \alpha])$

$([\alpha, \alpha^\circ], (\beta\alpha, \text{id2}])$

$([\alpha, \alpha^\circ], (\beta\alpha, \beta])$

$([\alpha, \alpha^\circ], [\text{id1}, \alpha^\circ))$

$([\alpha, \alpha^\circ], [\text{id1}, \text{id2}))$

$([\alpha, \alpha^\circ], [\text{id1}, \beta))$

$([\alpha, \alpha^\circ], [\alpha, \alpha^\circ))$

$([\alpha, \alpha^\circ], [\alpha, \text{id}_2])$

$([\alpha, \alpha^\circ], [\alpha, \beta])$

$([\alpha, \alpha^\circ], [\beta\alpha, \alpha^\circ])$

$([\alpha, \alpha^\circ], [\beta\alpha, \text{id}_2])$

$([\alpha, \alpha^\circ], [\beta\alpha, \beta])$

$([\alpha, \alpha^\circ], [\text{id}_1, \alpha^\circ])$

$([\alpha, \alpha^\circ], [\text{id}_1, \text{id}_2])$

$([\alpha, \alpha^\circ], [\text{id}_1, \beta])$

$([\alpha, \alpha^\circ], [\alpha, \alpha^\circ])$

$([\alpha, \alpha^\circ], [\alpha, \text{id}_2])$

$([\alpha, \alpha^\circ], [\alpha, \beta])$

$([\alpha, \alpha^\circ], [\beta\alpha, \alpha^\circ])$

$([\alpha, \alpha^\circ], [\beta\alpha, \text{id}_2])$

$([\alpha, \alpha^\circ], [\beta\alpha, \beta])$

5.5. Kombinationen mit $[\alpha, \text{id}2]$

$([\alpha, \text{id}2], (\text{id}1, \alpha^\circ))$

$([\alpha, \text{id}2], (\text{id}1, \text{id}2))$

$([\alpha, \text{id}2], (\text{id}1, \beta))$

$([\alpha, \text{id}2], (\alpha, \alpha^\circ))$

$([\alpha, \text{id}2], (\alpha, \text{id}2))$

$([\alpha, \text{id}2], (\alpha, \beta))$

$([\alpha, \text{id}2], (\beta\alpha, \alpha^\circ))$

$([\alpha, \text{id}2], (\beta\alpha, \text{id}2))$

$([\alpha, \text{id}2], (\beta\alpha, \beta))$

$([\alpha, \text{id}2], (\text{id}1, \alpha^\circ])$

$([\alpha, \text{id}2], (\text{id}1, \text{id}2])$

$([\alpha, \text{id}2], (\text{id}1, \beta])$

$([\alpha, \text{id}2], (\alpha, \alpha^\circ])$

$([\alpha, \text{id}2], (\alpha, \text{id}2])$

$([\alpha, \text{id}2], (\alpha, \beta])$

$([\alpha, \text{id}2], (\beta\alpha, \alpha^\circ])$

$([\alpha, \text{id}2], (\beta\alpha, \text{id}2])$

$([\alpha, \text{id}2], (\beta\alpha, \beta])$

$([\alpha, \text{id}2], [\text{id}1, \alpha^\circ))$

$([\alpha, \text{id}2], [\text{id}1, \text{id}2))$

$([\alpha, \text{id}2], [\text{id}1, \beta))$

$([\alpha, \text{id}2], [\alpha, \alpha^\circ))$

$([\alpha, \text{id}_2], [\alpha, \text{id}_2])$

$([\alpha, \text{id}_2], [\alpha, \beta])$

$([\alpha, \text{id}_2], [\beta\alpha, \alpha^\circ])$

$([\alpha, \text{id}_2], [\beta\alpha, \text{id}_2])$

$([\alpha, \text{id}_2], [\beta\alpha, \beta])$

$([\alpha, \text{id}_2], [\text{id}_1, \alpha^\circ])$

$([\alpha, \text{id}_2], [\text{id}_1, \text{id}_2])$

$([\alpha, \text{id}_2], [\text{id}_1, \beta])$

$([\alpha, \text{id}_2], [\alpha, \alpha^\circ])$

$([\alpha, \text{id}_2], [\alpha, \text{id}_2])$

$([\alpha, \text{id}_2], [\alpha, \beta])$

$([\alpha, \text{id}_2], [\beta\alpha, \alpha^\circ])$

$([\alpha, \text{id}_2], [\beta\alpha, \text{id}_2])$

$([\alpha, \text{id}_2], [\beta\alpha, \beta])$

5.6. Kombinationen mit $[\alpha, \beta]$

$([\alpha, \beta], (\text{id1}, \alpha^\circ))$

$([\alpha, \beta], (\text{id1}, \text{id2}))$

$([\alpha, \beta], (\text{id1}, \beta))$

$([\alpha, \beta], (\alpha, \alpha^\circ))$

$([\alpha, \beta], (\alpha, \text{id2}))$

$([\alpha, \beta], (\alpha, \beta))$

$([\alpha, \beta], (\beta\alpha, \alpha^\circ))$

$([\alpha, \beta], (\beta\alpha, \text{id2}))$

$([\alpha, \beta], (\beta\alpha, \beta))$

$([\alpha, \beta], (\text{id1}, \alpha^\circ])$

$([\alpha, \beta], (\text{id1}, \text{id2}])$

$([\alpha, \beta], (\text{id1}, \beta])$

$([\alpha, \beta], (\alpha, \alpha^\circ])$

$([\alpha, \beta], (\alpha, \text{id2}])$

$([\alpha, \beta], (\alpha, \beta])$

$([\alpha, \beta], (\beta\alpha, \alpha^\circ])$

$([\alpha, \beta], (\beta\alpha, \text{id2}])$

$([\alpha, \beta], (\beta\alpha, \beta])$

$([\alpha, \beta], [\text{id1}, \alpha^\circ))$

$([\alpha, \beta], [\text{id1}, \text{id2}))$

$([\alpha, \beta], [\text{id1}, \beta))$

$([\alpha, \beta], [\alpha, \alpha^\circ))$

$([\alpha, \beta], [\alpha, \text{id}_2])$

$([\alpha, \beta], [\alpha, \beta])$

$([\alpha, \beta], [\beta\alpha, \alpha^\circ])$

$([\alpha, \beta], [\beta\alpha, \text{id}_2])$

$([\alpha, \beta], [\beta\alpha, \beta])$

$([\alpha, \beta], [\text{id}_1, \alpha^\circ])$

$([\alpha, \beta], [\text{id}_1, \text{id}_2])$

$([\alpha, \beta], [\text{id}_1, \beta])$

$([\alpha, \beta], [\alpha, \alpha^\circ])$

$([\alpha, \beta], [\alpha, \text{id}_2])$

$([\alpha, \beta], [\alpha, \beta])$

$([\alpha, \beta], [\beta\alpha, \alpha^\circ])$

$([\alpha, \beta], [\beta\alpha, \text{id}_2])$

$([\alpha, \beta], [\beta\alpha, \beta])$

5.7. Kombinationen mit $[\beta\alpha, \alpha^\circ]$

$([\beta\alpha, \alpha^\circ], (\text{id1}, \alpha^\circ))$

$([\beta\alpha, \alpha^\circ], (\text{id1}, \text{id2}))$

$([\beta\alpha, \alpha^\circ], (\text{id1}, \beta))$

$([\beta\alpha, \alpha^\circ], (\alpha, \alpha^\circ))$

$([\beta\alpha, \alpha^\circ], (\alpha, \text{id2}))$

$([\beta\alpha, \alpha^\circ], (\alpha, \beta))$

$([\beta\alpha, \alpha^\circ], (\beta\alpha, \alpha^\circ))$

$([\beta\alpha, \alpha^\circ], (\beta\alpha, \text{id2}))$

$([\beta\alpha, \alpha^\circ], (\beta\alpha, \beta))$

$([\beta\alpha, \alpha^\circ], (\text{id1}, \alpha^\circ])$

$([\beta\alpha, \alpha^\circ], (\text{id1}, \text{id2}])$

$([\beta\alpha, \alpha^\circ], (\text{id1}, \beta])$

$([\beta\alpha, \alpha^\circ], (\alpha, \alpha^\circ])$

$([\beta\alpha, \alpha^\circ], (\alpha, \text{id2}])$

$([\beta\alpha, \alpha^\circ], (\alpha, \beta])$

$([\beta\alpha, \alpha^\circ], (\beta\alpha, \alpha^\circ])$

$([\beta\alpha, \alpha^\circ], (\beta\alpha, \text{id2}])$

$([\beta\alpha, \alpha^\circ], (\beta\alpha, \beta])$

$([\beta\alpha, \alpha^\circ], [\text{id1}, \alpha^\circ))$

$([\beta\alpha, \alpha^\circ], [\text{id1}, \text{id2}))$

$([\beta\alpha, \alpha^\circ], [\text{id1}, \beta))$

$([\beta\alpha, \alpha^\circ], [\alpha, \alpha^\circ))$

$([\beta\alpha, \alpha^\circ], [\alpha, \text{id}2])$

$([\beta\alpha, \alpha^\circ], [\alpha, \beta])$

$([\beta\alpha, \alpha^\circ], [\beta\alpha, \alpha^\circ])$

$([\beta\alpha, \alpha^\circ], [\beta\alpha, \text{id}2])$

$([\beta\alpha, \alpha^\circ], [\beta\alpha, \beta])$

$([\beta\alpha, \alpha^\circ], [\text{id}1, \alpha^\circ])$

$([\beta\alpha, \alpha^\circ], [\text{id}1, \text{id}2])$

$([\beta\alpha, \alpha^\circ], [\text{id}1, \beta])$

$([\beta\alpha, \alpha^\circ], [\alpha, \alpha^\circ])$

$([\beta\alpha, \alpha^\circ], [\alpha, \text{id}2])$

$([\beta\alpha, \alpha^\circ], [\alpha, \beta])$

$([\beta\alpha, \alpha^\circ], [\beta\alpha, \alpha^\circ])$

$([\beta\alpha, \alpha^\circ], [\beta\alpha, \text{id}2])$

$([\beta\alpha, \alpha^\circ], [\beta\alpha, \beta])$

5.8. Kombinationen mit $[\beta\alpha, \text{id}2]$

$([\beta\alpha, \text{id}2], (\text{id}1, \alpha^\circ))$

$([\beta\alpha, \text{id}2], (\text{id}1, \text{id}2))$

$([\beta\alpha, \text{id}2], (\text{id}1, \beta))$

$([\beta\alpha, \text{id}2], (\alpha, \alpha^\circ))$

$([\beta\alpha, \text{id}2], (\alpha, \text{id}2))$

$([\beta\alpha, \text{id}2], (\alpha, \beta))$

$([\beta\alpha, \text{id}2], (\beta\alpha, \alpha^\circ))$

$([\beta\alpha, \text{id}2], (\beta\alpha, \text{id}2))$

$([\beta\alpha, \text{id}2], (\beta\alpha, \beta))$

$([\beta\alpha, \text{id}2], (\text{id}1, \alpha^\circ])$

$([\beta\alpha, \text{id}2], (\text{id}1, \text{id}2])$

$([\beta\alpha, \text{id}2], (\text{id}1, \beta])$

$([\beta\alpha, \text{id}2], (\alpha, \alpha^\circ])$

$([\beta\alpha, \text{id}2], (\alpha, \text{id}2])$

$([\beta\alpha, \text{id}2], (\alpha, \beta])$

$([\beta\alpha, \text{id}2], (\beta\alpha, \alpha^\circ])$

$([\beta\alpha, \text{id}2], (\beta\alpha, \text{id}2])$

$([\beta\alpha, \text{id}2], (\beta\alpha, \beta])$

$([\beta\alpha, \text{id}2], [\text{id}1, \alpha^\circ))$

$([\beta\alpha, \text{id}2], [\text{id}1, \text{id}2))$

$([\beta\alpha, \text{id}2], [\text{id}1, \beta))$

$([\beta\alpha, \text{id}2], [\alpha, \alpha^\circ))$

$([\beta\alpha, \text{id}_2], [\alpha, \text{id}_2])$

$([\beta\alpha, \text{id}_2], [\alpha, \beta])$

$([\beta\alpha, \text{id}_2], [\beta\alpha, \alpha^\circ])$

$([\beta\alpha, \text{id}_2], [\beta\alpha, \text{id}_2])$

$([\beta\alpha, \text{id}_2], [\beta\alpha, \beta])$

$([\beta\alpha, \text{id}_2], [\text{id}_1, \alpha^\circ])$

$([\beta\alpha, \text{id}_2], [\text{id}_1, \text{id}_2])$

$([\beta\alpha, \text{id}_2], [\text{id}_1, \beta])$

$([\beta\alpha, \text{id}_2], [\alpha, \alpha^\circ])$

$([\beta\alpha, \text{id}_2], [\alpha, \text{id}_2])$

$([\beta\alpha, \text{id}_2], [\alpha, \beta])$

$([\beta\alpha, \text{id}_2], [\beta\alpha, \alpha^\circ])$

$([\beta\alpha, \text{id}_2], [\beta\alpha, \text{id}_2])$

$([\beta\alpha, \text{id}_2], [\beta\alpha, \beta])$

5.9. Kombinationen mit $[\beta\alpha, \beta]$

$([\beta\alpha, \beta], (\text{id1}, \alpha^\circ))$

$([\beta\alpha, \beta], (\text{id1}, \text{id2}))$

$([\beta\alpha, \beta], (\text{id1}, \beta))$

$([\beta\alpha, \beta], (\alpha, \alpha^\circ))$

$([\beta\alpha, \beta], (\alpha, \text{id2}))$

$([\beta\alpha, \beta], (\alpha, \beta))$

$([\beta\alpha, \beta], (\beta\alpha, \alpha^\circ))$

$([\beta\alpha, \beta], (\beta\alpha, \text{id2}))$

$([\beta\alpha, \beta], (\beta\alpha, \beta))$

$([\beta\alpha, \beta], (\text{id1}, \alpha^\circ])$

$([\beta\alpha, \beta], (\text{id1}, \text{id2}])$

$([\beta\alpha, \beta], (\text{id1}, \beta])$

$([\beta\alpha, \beta], (\alpha, \alpha^\circ])$

$([\beta\alpha, \beta], (\alpha, \text{id2}])$

$([\beta\alpha, \beta], (\alpha, \beta])$

$([\beta\alpha, \beta], (\beta\alpha, \alpha^\circ])$

$([\beta\alpha, \beta], (\beta\alpha, \text{id2}])$

$([\beta\alpha, \beta], (\beta\alpha, \beta])$

$([\beta\alpha, \beta], [\text{id1}, \alpha^\circ])$

$([\beta\alpha, \beta], [\text{id1}, \text{id2}])$

$([\beta\alpha, \beta], [\text{id1}, \beta])$

$([\beta\alpha, \beta], [\alpha, \alpha^\circ])$

$([\beta\alpha, \beta], [\alpha, \text{id}_2])$

$([\beta\alpha, \beta], [\alpha, \beta])$

$([\beta\alpha, \beta], [\beta\alpha, \alpha^\circ])$

$([\beta\alpha, \beta], [\beta\alpha, \text{id}_2])$

$([\beta\alpha, \beta], [\beta\alpha, \beta])$

$([\beta\alpha, \beta], [\text{id}_1, \alpha^\circ])$

$([\beta\alpha, \beta], [\text{id}_1, \text{id}_2])$

$([\beta\alpha, \beta], [\text{id}_1, \beta])$

$([\beta\alpha, \beta], [\alpha, \alpha^\circ])$

$([\beta\alpha, \beta], [\alpha, \text{id}_2])$

$([\beta\alpha, \beta], [\alpha, \beta])$

$([\beta\alpha, \beta], [\beta\alpha, \alpha^\circ])$

$([\beta\alpha, \beta], [\beta\alpha, \text{id}_2])$

$([\beta\alpha, \beta], [\beta\alpha, \beta])$

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5.2.2019