$$\begin{split} t_1 &= \sigma(\sigma(x_1, \quad \alpha), \sigma(\gamma(x_3), x_3)) \\ t_2 &= \sigma(\sigma(\gamma(x_2), \alpha), \sigma(x_2, \quad x_3)) \end{split}$$

$$\left\{\begin{pmatrix}\sigma(\sigma(x_1,\alpha), & \sigma(\gamma(x_3),x_3))\\\sigma(\sigma(\gamma(x_2),\alpha), & \sigma(x_2,x_3))\end{pmatrix}\right\}$$

$$\begin{cases} \left(\begin{matrix} \sigma(\sigma(x_1,\alpha), & \sigma(\gamma(x_3),x_3)) \\ \sigma(\sigma(\gamma(x_2),\alpha), & \sigma(x_2,x_3)) \end{matrix} \right) \end{cases}$$
 Dekomp.
$$\Rightarrow \left\{ \left(\begin{matrix} \sigma(x_1,\alpha) \\ \sigma(\gamma(x_2),\alpha) \end{matrix} \right), \left(\begin{matrix} \sigma(\gamma(x_3),x_3) \\ \sigma(x_2,x_3) \end{matrix} \right) \right\}$$

$$\begin{cases} \left(\begin{matrix} \sigma(\sigma(x_1,\alpha), & \sigma(\gamma(x_3),x_3)) \\ \sigma(\sigma(\gamma(x_2),\alpha), & \sigma(x_2,x_3)) \end{matrix} \right) \end{cases}$$
 Dekomp.
$$\Rightarrow \left\{ \left(\begin{matrix} \sigma(x_1,\alpha) \\ \sigma(\gamma(x_2),\alpha) \end{matrix} \right), \left(\begin{matrix} \sigma(\gamma(x_3),x_3) \\ \sigma(x_2,x_3) \end{matrix} \right) \right\}$$
 Dekomp.
$$\Rightarrow \left\{ \left(\begin{matrix} x_1 \\ \gamma(x_2) \end{matrix} \right), \left(\begin{matrix} \alpha \\ \alpha \end{matrix} \right), \left(\begin{matrix} \gamma(x_3) \\ x_2 \end{matrix} \right), \left(\begin{matrix} x_3 \\ x_3 \end{matrix} \right) \right\}$$

$$\begin{cases} \left(\begin{array}{ccc} \sigma(\sigma(x_1,\alpha), & \sigma(\gamma(x_3),x_3)) \\ \sigma(\sigma(\gamma(x_2),\alpha), & \sigma(x_2,x_3)) \end{array} \right) \\ & \Rightarrow & \left\{ \left(\begin{array}{ccc} \sigma(x_1,\alpha) \\ \sigma(\gamma(x_2),\alpha) \end{array} \right), \left(\begin{array}{ccc} \sigma(\gamma(x_3),x_3) \\ \sigma(x_2,x_3) \end{array} \right) \right\} \\ & \xrightarrow{\text{Dekomp.}} & \left\{ \left(\begin{array}{ccc} x_1 \\ \gamma(x_2) \end{array} \right), \left(\begin{array}{c} \alpha \\ \alpha \end{array} \right), \left(\begin{array}{ccc} \gamma(x_3) \\ x_2 \end{array} \right), \left(\begin{array}{ccc} x_3 \\ x_3 \end{array} \right) \right\} \\ & \xrightarrow{\text{Elim.}} & \left\{ \left(\begin{array}{ccc} x_1 \\ \gamma(x_2) \end{array} \right), \left(\begin{array}{ccc} \alpha \\ \alpha \end{array} \right), \left(\begin{array}{ccc} \gamma(x_3) \\ x_2 \end{array} \right) \right\} \\ \end{cases}$$

$$\begin{cases} \left(\begin{array}{ccc} \sigma(\sigma(x_1,\alpha), & \sigma(\gamma(x_3),x_3)) \\ \sigma(\sigma(\gamma(x_2),\alpha), & \sigma(x_2,x_3)) \end{array} \right) \\ & \Rightarrow \\ \left\{ \left(\begin{array}{ccc} \sigma(x_1,\alpha) \\ \sigma(\gamma(x_2),\alpha) \end{array} \right), \left(\begin{array}{ccc} \sigma(\gamma(x_3),x_3) \\ \sigma(x_2,x_3) \end{array} \right) \right\} \\ & \Rightarrow \\ \left\{ \left(\begin{array}{ccc} x_1 \\ \gamma(x_2) \end{array} \right), \left(\begin{array}{ccc} \alpha \\ \alpha \end{array} \right), \left(\begin{array}{ccc} \gamma(x_3) \\ x_2 \end{array} \right), \left(\begin{array}{ccc} x_3 \\ x_3 \end{array} \right) \right\} \\ & \xrightarrow{\text{Elim.}} \\ & \Rightarrow \\ \left\{ \left(\begin{array}{ccc} x_1 \\ \gamma(x_2) \end{array} \right), \left(\begin{array}{ccc} \alpha \\ \alpha \end{array} \right), \left(\begin{array}{ccc} \gamma(x_3) \\ x_2 \end{array} \right) \right\} \\ & \xrightarrow{\text{Dekomp.}} \\ & \Rightarrow \\ \left\{ \left(\begin{array}{ccc} x_1 \\ \gamma(x_2) \end{array} \right), \left(\begin{array}{ccc} \gamma(x_3) \\ \alpha \end{array} \right) \right\} \end{cases}$$

$$\begin{cases} \left(\begin{matrix} \sigma(\sigma(x_1,\alpha), & \sigma(\gamma(x_3),x_3)) \\ \sigma(\sigma(\gamma(x_2),\alpha), & \sigma(x_2,x_3)) \end{matrix} \right) \\ \Rightarrow \left\{ \left(\begin{matrix} \sigma(x_1,\alpha) \\ \sigma(\gamma(x_2),\alpha) \end{matrix} \right), \left(\begin{matrix} \sigma(\gamma(x_3),x_3) \\ \sigma(x_2,x_3) \end{matrix} \right) \right\} \end{cases}$$
 Dekomp.
$$\Rightarrow \left\{ \left(\begin{matrix} x_1 \\ \gamma(x_2) \end{matrix} \right), \left(\begin{matrix} \alpha \\ \alpha \end{matrix} \right), \left(\begin{matrix} \gamma(x_3) \\ x_2 \end{matrix} \right), \left(\begin{matrix} x_3 \\ x_3 \end{matrix} \right) \right\}$$
 Elim.
$$\Rightarrow \left\{ \left(\begin{matrix} x_1 \\ \gamma(x_2) \end{matrix} \right), \left(\begin{matrix} \alpha \\ \alpha \end{matrix} \right), \left(\begin{matrix} \gamma(x_3) \\ x_2 \end{matrix} \right) \right\}$$
 Dekomp.
$$\Rightarrow \left\{ \left(\begin{matrix} x_1 \\ \gamma(x_2) \end{matrix} \right), \left(\begin{matrix} \gamma(x_3) \\ x_2 \end{matrix} \right) \right\}$$
 Vert.
$$\Rightarrow \left\{ \left(\begin{matrix} x_1 \\ \gamma(x_2) \end{matrix} \right), \left(\begin{matrix} x_2 \\ \gamma(x_3) \end{matrix} \right) \right\}$$

$$\left\{ \begin{pmatrix} x_1 \\ \gamma(x_2) \end{pmatrix}, \begin{pmatrix} x_2 \\ \gamma(x_3) \end{pmatrix} \right\}$$

$$\begin{cases} \begin{pmatrix} x_1 \\ \gamma(x_2) \end{pmatrix}, \begin{pmatrix} x_2 \\ \gamma(x_3) \end{pmatrix} \\ \end{cases}$$
 Subst.
$$\begin{cases} \begin{pmatrix} x_1 \\ \gamma(\gamma(x_3)) \end{pmatrix}, \begin{pmatrix} x_2 \\ \gamma(x_3) \end{pmatrix} \\ \end{cases}$$

$$\begin{split} \left\{ \begin{pmatrix} x_1 \\ \gamma(x_2) \end{pmatrix}, \begin{pmatrix} x_2 \\ \gamma(x_3) \end{pmatrix} \right\} \\ & \stackrel{\text{Subst.}}{\Rightarrow} \left\{ \begin{pmatrix} x_1 \\ \gamma(\gamma(x_3)) \end{pmatrix}, \begin{pmatrix} x_2 \\ \gamma(x_3) \end{pmatrix} \right\} \\ & x_1 \mapsto \gamma(\gamma(x_3)) \qquad x_2 \mapsto \gamma(x_3) \qquad x_3 \mapsto x_3 \end{split}$$

$$\begin{cases} \begin{pmatrix} x_1 \\ \gamma(x_2) \end{pmatrix}, \begin{pmatrix} x_2 \\ \gamma(x_3) \end{pmatrix} \\ \end{cases}$$
 Subst.
$$\Rightarrow \begin{cases} \begin{pmatrix} x_1 \\ \gamma(\gamma(x_3)) \end{pmatrix}, \begin{pmatrix} x_2 \\ \gamma(x_3) \end{pmatrix} \\ \end{cases}$$

$$x_1 \mapsto \gamma(\gamma(x_3)) \hspace{1cm} x_2 \mapsto \gamma(x_3) \hspace{1cm} x_3 \mapsto x_3$$

Zwei weitere Unifikatoren:

$$\begin{array}{lll} x_1 \mapsto \gamma(\gamma(\alpha)) & & x_2 \mapsto \gamma(\alpha) & & x_3 \mapsto \alpha \\ x_1 \mapsto \gamma(\gamma(\sigma(\alpha,\alpha))) & & x_2 \mapsto \gamma(\sigma(\alpha,\alpha)) & & x_3 \mapsto \sigma(\alpha,\alpha) \end{array}$$