

Coordinate conjugations for Metaclass I

```
In[1]:= SetDirectory["~/writing/WIP/Conjugation/"]  
<< kappaLib.m
```

```
Out[1]= /Users/rosebud/writing/WIP/Conjugation
```

```
KappaLib v1.1
```

```
In[3]:= mat1 = 
$$\begin{pmatrix} a1 & 0 & 0 & -b1 & 0 & 0 \\ 0 & a2 & 0 & 0 & -b2 & 0 \\ 0 & 0 & a3 & 0 & 0 & -b3 \\ b1 & 0 & 0 & a1 & 0 & 0 \\ 0 & b2 & 0 & 0 & a2 & 0 \\ 0 & 0 & b3 & 0 & 0 & a3 \end{pmatrix};$$

```

```
H2 = 
$$\begin{pmatrix} 0 & 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 \\ 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 \end{pmatrix};$$

```

```
H3 = 
$$\begin{pmatrix} 0 & 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & -1 \\ 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & -1 & 0 & 0 & 0 \end{pmatrix};$$

```

```
kappa1 = emMatrixToKappa[mat1];  
kappa2 = emMatrixToKappa[H2.mat1.H2];  
kappa3 = emMatrixToKappa[H3.mat1.H3];
```

```
In[9]:= Union[Flatten[kappa2 - kappa3]]
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```
Out[9]= {0}
```

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In[10]:= L = DiagonalMatrix[{-1, 1, 1, 1}];  
kappa2a = emCoordinateChange[kappa2, L];
```

```
In[12]:= Union[Flatten[kappa2a - kappa1]]
```

```
Out[12]= {0}
```