

```
In[1]:= SetDirectory["~/writing/WIP/KappaLib"];
<< kappaLib.m
KappaLib v1.1
```

■ **Example 5.2. Define 5-parameter medium with zero Tamm-Rubilar tensor density**

```
In[3]:= Ax =  $\begin{pmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{pmatrix};$ 
```

```
Bx =  $\begin{pmatrix} 0 & 0 & \text{lam1} \\ 0 & 0 & \text{lam2} \\ \text{lam1} & \text{lam2} & \text{lam3} \end{pmatrix};$ 
```

```
Cx =  $\begin{pmatrix} -\frac{1}{2^{1/3}} & 0 & \text{lam4} \\ 0 & -\frac{1}{2^{1/3}} & \text{lam5} \\ 0 & 0 & 2^{2/3} \end{pmatrix};$ 
```

```
Dx = Transpose[Cx];
```

```
kappa = emABCDToKappa[Ax, Bx, Cx, Dx];
```

■ **Check properties**

```
In[8]:= Union[Flatten[emKappaToTR[kappa]]]
```

```
Out[8]= {0}
```

```
In[9]:= Ax - Transpose[Ax]
Bx - Transpose[Bx]
Dx - Transpose[Cx]
emTrace[kappa]
```

```
Out[9]= {{0, 0, 0}, {0, 0, 0}, {0, 0, 0}}
```

```
Out[10]= {{0, 0, 0}, {0, 0, 0}, {0, 0, 0}}
```

```
Out[11]= {{0, 0, 0}, {0, 0, 0}, {0, 0, 0}}
```

```
Out[12]= 0
```

```
In[13]:= emDet[kappa]
```

```
Out[13]= 1
```