In[249]:=
```
Mneut[[Range[8, 14], 8]] /. {σn[3] → 0, σv[i_] → 0} // Simplify // MatrixForm
```

Out[249]//MatrixForm=

$$\begin{pmatrix} \frac{1}{4}\left(4\,mH1^2 + g2^2\,v1^2 - g2^2\,v2^2 + g1^2\left(v1^2 - v2^2\right) + 4\,v2^2\,\kappa 0^2 + 4\,\kappa 0^2\,\sigma S^2\right) \\ \frac{1}{2}\,\sigma S\,\left(2\,A0 + \kappa 0\,\kappa 3\,\sigma S\right) \\ v2\,\left(A0 - \kappa 0\,\kappa 3\,\sigma S\right) \\ 0 \\ 0 \\ 0 \\ 0 \end{pmatrix}$$

In[250]:=
```
Mneut[[Range[8, 14], 9]] /. {σn[3] → 0, σv[i_] → 0} // Simplify // MatrixForm
```

Out[250]//MatrixForm=

$$\begin{pmatrix} \frac{1}{2}\,\sigma S\,\left(2\,A0 + \kappa 0\,\kappa 3\,\sigma S\right) \\ \frac{1}{4}\left(4\,mH2^2 - g2^2\,v1^2 + g2^2\,v2^2 + g1^2\left(-v1^2 + v2^2\right) + 4\,v1^2\,\kappa 0^2 + 4\,\kappa 0^2\,\sigma S^2\right) \\ v1\,\left(A0 - \kappa 0\,\kappa 3\,\sigma S\right) \\ 0 \\ 0 \\ 0 \\ 0 \end{pmatrix}$$

In[251]:=
```
Mneut[[Range[8, 14], 10]] /. {σn[3] → 0, σv[i_] → 0} // Simplify // MatrixForm
```

Out[251]//MatrixForm=

$$\begin{pmatrix} v2\,\left(A0 - \kappa 0\,\kappa 3\,\sigma S\right) \\ v1\,\left(A0 - \kappa 0\,\kappa 3\,\sigma S\right) \\ MS^2 + v1^2\,\kappa 0^2 + v2^2\,\kappa 0^2 + v1\,v2\,\kappa 0\,\kappa 3 - A3\,\sigma S + \frac{\kappa 3^2\,\sigma S^2}{2} \\ 0 \\ 0 \\ 0 \\ 0 \end{pmatrix}$$

In[252]:=
```
Mneut[[Range[8, 14], 11]] /. {σn[3] → 0, σv[i_] → 0} // Simplify // MatrixForm
```

Out[252]//MatrixForm=

$$\begin{pmatrix} 0 \\ 0 \\ 0 \\ \frac{1}{4}\left(g1^2\left(v1^2-v2^2\right)+g2^2\left(v1^2-v2^2\right)+4\left(ML[1,1]^2+v2^2\,\kappa1[1]^2\right)\right) \\ ML[1,2]^2+v2^2\,\kappa1[1]\,\kappa1[2] \\ ML[1,3]^2+v2^2\,\kappa1[1]\,\kappa1[3] \\ -v1\,\kappa0\,\sigma S\,\kappa1[1]+v2\,(A1[1]-\kappa2\,\sigma S\,\kappa1[1]) \end{pmatrix}$$

In[253]:=
```
Mneut[[Range[8, 14], 12]] /. {σn[3] → 0, σv[i_] → 0} // Simplify // MatrixForm
```

Out[253]//MatrixForm=

$$\begin{pmatrix} 0 \\ 0 \\ 0 \\ ML[1,2]^2+v2^2\,\kappa1[1]\,\kappa1[2] \\ \frac{1}{4}\left(g1^2\left(v1^2-v2^2\right)+g2^2\left(v1^2-v2^2\right)+4\left(ML[2,2]^2+v2^2\,\kappa1[2]^2\right)\right) \\ ML[2,3]^2+v2^2\,\kappa1[2]\,\kappa1[3] \\ -v1\,\kappa0\,\sigma S\,\kappa1[2]+v2\,(A1[2]-\kappa2\,\sigma S\,\kappa1[2]) \end{pmatrix}$$

In[254]:=
```
Mneut[[Range[8, 14], 13]] /. {σn[3] → 0, σv[i_] → 0} // Simplify // MatrixForm
```

Out[254]//MatrixForm=

$$\begin{pmatrix} 0 \\ 0 \\ 0 \\ ML[1,3]^2+v2^2\,\kappa1[1]\,\kappa1[3] \\ ML[2,3]^2+v2^2\,\kappa1[2]\,\kappa1[3] \\ \frac{1}{4}\left(g1^2\left(v1^2-v2^2\right)+g2^2\left(v1^2-v2^2\right)+4\left(ML[3,3]^2+v2^2\,\kappa1[3]^2\right)\right) \\ -v1\,\kappa0\,\sigma S\,\kappa1[3]+v2\,(A1[3]-\kappa2\,\sigma S\,\kappa1[3]) \end{pmatrix}$$

In[255]:=
```
Mneut[[Range[8, 14], 14]] /. {σn[3] → 0, σv[i_] → 0} // Simplify // MatrixForm
```

Out[255]//MatrixForm=

$$\begin{pmatrix} 0 \\ 0 \\ 0 \\ -\text{v1}\,\kappa 0\,\sigma\text{S}\,\kappa 1[1] + \text{v2}\,(\text{A1}[1] - \kappa 2\,\sigma\text{S}\,\kappa 1[1]) \\ -\text{v1}\,\kappa 0\,\sigma\text{S}\,\kappa 1[2] + \text{v2}\,(\text{A1}[2] - \kappa 2\,\sigma\text{S}\,\kappa 1[2]) \\ -\text{v1}\,\kappa 0\,\sigma\text{S}\,\kappa 1[3] + \text{v2}\,(\text{A1}[3] - \kappa 2\,\sigma\text{S}\,\kappa 1[3]) \\ \text{v1}\,\text{v2}\,\kappa 0\,\kappa 2 - \text{A2}\,\sigma\text{S} + \kappa 2^2\,\sigma\text{S}^2 - \frac{1}{2}\,\kappa 2\,\kappa 3\,\sigma\text{S}^2 + \text{MN}[3,\,3]^2 + \text{v2}^2\,\kappa 1[1]^2 + \text{v2}^2\,\kappa 1[2]^2 + \text{v2}^2\,\kappa 1[3]^2 \end{pmatrix}$$