$$H_{131} = \begin{bmatrix} 2\,h-6\,\mu+U & -\left(\sqrt{\frac{2}{3}}\,t\right) & 0 & -2\,t & 0 & 0 & 0 & \frac{2\,t}{\sqrt{3}} \\ -\left(\sqrt{\frac{2}{3}}\,t\right) & 2\,h-6\,\mu+U & \sqrt{6}\,t & 0 & -\left(\sqrt{3}\,t\right) & 0 & \frac{2\,t}{\sqrt{3}} & 0 \\ 0 & \sqrt{6}\,t & 2\,h-6\,\mu+2\,U & 0 & 0 & 0 & 0 & 0 \\ -2\,t & 0 & 0 & 2\,h-6\,\mu+2\,U & -\left(\sqrt{2}\,t\right) & 0 & 0 & 0 \\ 0 & -\left(\sqrt{3}\,t\right) & 0 & -\left(\sqrt{2}\,t\right) & 2\,h-6\,\mu+2\,U & 2\,t & 0 & 0 \\ 0 & 0 & 0 & 0 & 2\,t & 2\,h-6\,\mu+2\,U & 0 & 0 \\ 0 & \frac{2\,t}{\sqrt{3}} & 0 & 0 & 0 & 0 & 2\,h-6\,\mu+U & -2\,\sqrt{\frac{2}{3}}\,t \\ \frac{2\,t}{\sqrt{3}} & 0 & 0 & 0 & 0 & 0 & -2\,\sqrt{\frac{2}{3}}\,t & 2\,h-6\,\mu+U \end{bmatrix}$$