

$$\hbar = \gamma = 1;$$

DeclareAlgebra[QU, Generators $\rightarrow \{X, Y, Z, b, a, z, y, x\}$, Centrals $\rightarrow \{s, t\}$];

$$B[a_{QU}, x_{QU}] = -2 QU @ x;$$

$$B[b_{QU}, x_{QU}] = QU @ x;$$

$$B[b_{QU}, y_{QU}] = -2 QU @ y;$$

$$B[a_{QU}, y_{QU}] = QU @ y;$$

$$B[a_{QU}, z_{QU}] = -QU @ z;$$

$$B[b_{QU}, z_{QU}] = -QU @ z;$$

$$B[y_{QU}, x_{QU}] = -z_{QU} + \epsilon \hbar QU [y, x];$$

$$B[z_{QU}, x_{QU}] = -\epsilon \hbar QU [z, x];$$

$$B[b_{QU}, a_{QU}] = 0;$$

$$B[z_{QU}, y_{QU}] = \epsilon \hbar QU [z, y];$$

$$B[a_{QU}, X_{QU}] = 2 X_{QU};$$

$$B[b_{QU}, X_{QU}] = -X_{QU};$$

$$B[a_{QU}, Y_{QU}] = -Y_{QU};$$

$$B[b_{QU}, Y_{QU}] = 2 Y_{QU};$$

$$B[a_{QU}, Z_{QU}] = Z_{QU};$$

$$B[b_{QU}, Z_{QU}] = Z_{QU};$$

$$B[x_{QU}, X_{QU}] = -2 \epsilon \hbar QU @ \{X, x\} + \frac{(1-s) QU []}{\hbar} + 2 s \epsilon QU [a];$$

$$B[y_{QU}, Y_{QU}] = -2 \epsilon \hbar QU @ \{Y, y\} + \frac{(1-t) QU []}{\hbar} + 2 t \epsilon QU [b];$$

$$B[z_{QU}, Z_{QU}] = -2 \epsilon \hbar QU @ \{Z, z\} + \frac{(1-st) QU []}{\hbar} + 2 s t \epsilon QU [a] + 2 s t \epsilon QU [b];$$

$$B[y_{QU}, Z_{QU}] = X_{QU} - \epsilon \hbar QU @ \{Z, y\};$$

$$B[x_{QU}, Z_{QU}] = -\epsilon \hbar QU @ \{Z, x\} - (s + s \epsilon \hbar) QU [Y] + 2 s \epsilon \hbar QU [Y, a];$$

$$B[z_{QU}, X_{QU}] = 2 \epsilon y_{QU} - \epsilon \hbar QU @ \{X, z\};$$

$$B[z_{QU}, Y_{QU}] = -2 t \epsilon QU [x] - \epsilon \hbar QU [Y, z];$$

$$B[y_{QU}, X_{QU}] = \epsilon \hbar QU [X, y];$$

$$B[x_{QU}, Y_{QU}] = \epsilon \hbar QU [Y, x];$$

$$B[X_{QU}, Y_{QU}] = 2 \epsilon Z_{QU} - \epsilon \hbar QU [X, Y];$$

$$B[X_{QU}, Z_{QU}] = \epsilon \hbar QU [X, Z];$$

$$B[Z_{QU}, Y_{QU}] = \epsilon \hbar QU [Y, Z];$$