

**DeclareAlgebra** [QU, Generators  $\rightarrow$  {y, a, x},  
Centrals  $\rightarrow$  {t, T}];

**B** [a<sub>QU</sub>, y<sub>QU</sub>] = - $\gamma$  y<sub>QU</sub>; **B** [x<sub>QU</sub>, a<sub>QU</sub>] = - $\gamma$  QU@x;

**B** [x<sub>QU</sub>, y<sub>QU</sub>] := **SS** [q $\hbar$  - 1] QU@{y, x} +  
 $\mathbb{O}_{QU}$  [ {a}, **SS** [ (1 - T e<sup>-2 $\epsilon$  a  $\hbar$</sup> ) /  $\hbar$  ] ];

(**S**@y<sub>QU</sub> :=  $\mathbb{O}_{QU}$  [ {a, y}, **SS** [-T<sup>-1</sup> e <sup>$\hbar \epsilon$  a</sup> y] ] ); **S**@a<sub>QU</sub> = -a<sub>QU</sub>;  
**S**@x<sub>QU</sub> :=  $\mathbb{O}_{QU}$  [ {a, x}, **SS** [-e <sup>$\hbar \epsilon$  a</sup> x] ] );

**S**<sub>i\_</sub> [QU, Centrals] = {t<sub>i</sub>  $\rightarrow$  -t<sub>i</sub>, T<sub>i</sub>  $\rightarrow$  T<sub>i</sub><sup>-1</sup>};

$\Delta$ @y<sub>QU</sub> :=  $\mathbb{O}_{QU}$  [ {y<sub>1</sub>, a<sub>1</sub>}<sub>1</sub>, {y<sub>2</sub>}<sub>2</sub>, **SS** [y<sub>1</sub> + T<sub>1</sub> e<sup>- $\hbar \epsilon$  a<sub>1</sub></sup> y<sub>2</sub>] ] );

$\Delta$ @a<sub>QU</sub> = QU@a<sub>1</sub> + QU@a<sub>2</sub>;

$\Delta$ @x<sub>QU</sub> :=  $\mathbb{O}_{QU}$  [ {a<sub>1</sub>, x<sub>1</sub>}<sub>1</sub>, {x<sub>2</sub>}<sub>2</sub>, **SS** [x<sub>1</sub> + e<sup>- $\hbar \epsilon$  a<sub>1</sub></sup> x<sub>2</sub>] ] );

$\Delta$ <sub>i\_ $\rightarrow$ j\_,k\_</sub> [QU, Centrals] = {t<sub>i</sub>  $\rightarrow$  t<sub>j</sub> + t<sub>k</sub>, T<sub>i</sub>  $\rightarrow$  T<sub>j</sub> T<sub>k</sub>};