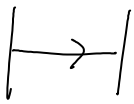
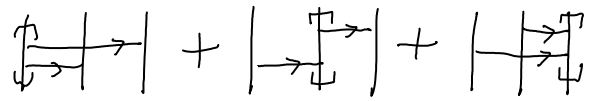
2D Lie, undoubled

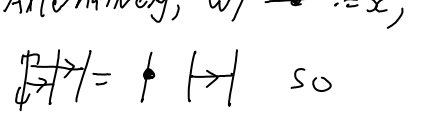
June-18-11
10:40 AM

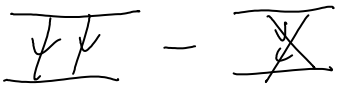
 $\to x \wedge y = r \qquad [x,y] = x.$



$$\cancel{-xyx} + \cancel{xxy} \quad \cancel{+yxx} - \cancel{xxy} \quad \cancel{-yxx} + \cancel{xyx} = 0$$

Alternatively, w/ $:= x$,

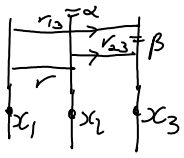




$$= -xy\otimes yx - yx\otimes xy + xy\otimes xy + yx\otimes yx$$
$$= xy\otimes x - yx\otimes x = x\otimes x$$

$$\mathrm{ad}_{-y}(x) = \hbar x \Rightarrow (\mathrm{ad}_{-y})^n(x) = \hbar^n x \Rightarrow e^{\mathrm{ad}_{-y}}(x) = e^{-y} x e^{y} = e^{\hbar} x$$
$$\Rightarrow \forall f(x),\ e^{-y} f(x) e^{y} = f(e^{\hbar} x)$$

What's the quantum R-matrix?



$$[r,\alpha] = x_1\beta \qquad [r,\beta] = -x_2\alpha$$
$$[r,x_1] = x_1x_2 \qquad [r,x_2] = -x_1x_2$$