$\exp(:H:), \qquad H = -B_z/(8p^2B\rho)p_\phi p_r,$

Disables the nonlinear fringe of solenoid if nonzero. The default is 0. The transformation for the nonlinear fringe is ϵ

 $p_{\phi} = xp_{y} - yp_{x},$ $p_{r} = xp_{x} + yp_{y},$

where

whose canonical partners are

 $\phi = \operatorname{ArcTan}[y/x],$

 $r = \text{Log}[x^2 + y^2]/2,$

 $r = \text{Log}[x^- + y^-]/2$, respectively.