is expressed by

respectively.

whose canonical partners are

where

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

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

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

 $p_{\phi} = x p_{v} - y p_{x},$

 $p_r = xp_x + yp_y,$

(195)

(196)

(197)

(198)

(199)