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# Spin Depolarization due to Beam-Beam Interaction in NLC*

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## Abstract

Calculations of spin depolarization effects due to the beam-beam interaction are presented for several NLC designs. The depolarization comes from both classical (Bargmann-Michel-Telegdi precession) and quantum (Sokolov-Ternov spin-flip) effects. It is anticipated that some physics experiments at future colliders will require a knowledge of the polarization to better than 0.5% precision. We compare the results of CAIN simulations with the analytic estimates of Yokoya and Chen for head-on collisions.† We also study the effects of transverse offsets and beamstrahlung-induced energy spread.

† K.Yokoya and P.Chen, 8th International Conference on High Energy Spin Physics, Minneapolis, 12-17 September 1988.

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