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Spin-polarization simulations for the Future Circular Collider e+e- using Bmad

Monday, 8 May 2023 16:30 (2 hours)

The high precision measurement of the centre-of-mass energy in the Future Circular Collider e+e- (FCC-ee) at Z and W energies can be realized through resonant spin depolarization utilizing transversely polarized beams. This requires a guaranteed sufficiently-high spin polarization in the presence of lattice imperfections. Investigations of the impact of misalignments on the equilibrium polarization are conducted using analytical and Monte-Carlo spin simulations with Bmad. Potential optimization schemes to ensure high polarization using orbit bumps have been explored.

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Footnotes

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Yes

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