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Simulations of FCC-ee beam-beam effects with xsuite

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The aim for the highest luminosities with the FCC-ee poses several constraints on the choice of the machine parameters. Unprecedented conditions are foreseen during beam-beam collisions which are expected to give rise to previously unseen dynamical mechanisms. The exploration and understanding of these effects as well as the identification of optimal working points are of crucial importance for the success of the FCC-ee feasibility study. To address these challenges using the latest computational technologies, a new general purpose software framework for beam dynamics simulations (called xsuite) is currently under development. This talk will focus on recent developments and benchmarking of FCC-ee beam-beam collision modeling using the xsuite framework.

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