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PPS-Sim: Polarised Positron Source Modelling using Geant4

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The computer simulation code PPS-Sim has been developed to provide a user friendly framework for modelling a polarised positron source for a next linear collider.

The program is based on Geant4 and can calculate yield and polarisation of produced positrons, beam parameters (beam size, emittance, mean energy), and energy deposition in source components. The simulation includes polarisation transfer in the positron production target, and depolarisation effects, as well as spin precession in the electro-magnetic field of the capture optics. The source layout can be configured using a graphical user interface based on Qt. An internal analysis package allows the immediate evaluation of the results, which can also be saved as ROOT files.

PPS-Sim is freely available from the web page (http://pps-sim.desy.de).

Preprint URL

http://pps-sim.desy.de

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