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Abstract

An easy to use particle list interchange format for Monte Carlo calculations has been developed in collaboration between ESS and DTU. The software called MCPL is freely available to the SINE2020 collaboration and other interested parties via the website: https://mctools.github.io/mcpl/

MCPL files contain lists of particle state information, and allows for easy storage and interchange of particles between various Monte Carlo simulation applications. It is implemented in portable C code and is made available to the scientific community, along with converters and plugins for several popular simulation packages, include Geant4, MCNP(X) and McStas.

A paper documenting the developed technology and use-cases has been submitted to the journal Computer Physics Communications (CPC), and is further available as a draft on arXiv: https://arxiv.org/abs/1609.02792

MCPL components have been included in McStas since release 2.3 (April 2016), see http://www.mcstas.org. Further, a set of patches to the earlier McStas components for reading/writing MCNP SSR/SSW files have been provided by PSI and are included in the development version of McStas – see https://github.com/McStasMcXtrace/McCode

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