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Simulation of the secondary beams in the CERN north and east areas using FLUKA

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The CERN North and East Experimental Areas provide a wide variety of secondary beams for fixed-target experiments and test beam set-ups. These secondary beams are exploited by the many users of these facilities, requiring a large diversity of different particle species at different momenta. Magnetic selection as well as optional converters and absorbers are used to create the beams according to user and experiment requirements. Presented here are start-to-end Monte Carlo simulations of complete secondary beam lines using FLUKA, which demonstrate beam composition, spectra and beam size. Custom geometry and accurate magnetic field maps are composed automatically into detailed models. A comparison with measured beam composition in select cases is presented along with a description of the automated beam line modelling.

Footnotes

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Europe

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