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Tools for the Simulation of Long-Lived SUSY Particles in the ATLAS experiment

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Searches for long-lived particles have garnered increased attention in recent years, demanding the development of more complex Monte Carlo simulation methods. The ATLAS experiment has recently updated its infrastructure for the generation, simulation, and in-flight decays of R-hadrons, some of the most complex long-lived SUSY states to model. In this talk, the tools and configuration that are used, including the configuration of Geant4 and Pythia8, are described. The recently-revised complex mass spectrum of R-hadrons is also explained and justified. This publicly-documented configuration is put forward as the next standard for R-hadron simulation.

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