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Simulating the propagation of cosmic rays heavier than iron in SimProp

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Ultra-high-energy cosmic rays (UHECRs) have long been assumed to entirely consist of iron and/or lighter atomic nuclei, and this assumption has been hard-coded in a great deal of software for UHECR simulations and data analysis. However, in the last few years several authors have started questioning this assumption and entertaining the possibility that UHECRs might at least partly consist of nuclei of elements heavier than iron, especially at the highest energies. Thoroughly testing this hypothesis will require upgrading software so that it can handle such nuclei. In this contribution I will describe the minimal modifications required for the last publicly released version of *SimProp*, a code for Monte Carlo simulations of the intergalactic propagation of UHECRs, to be able to treat heavier nuclei, and discuss the applicability of approximations first introduced for lighter nuclei.

Collaboration(s)

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