CRPropa 3.2: a framework for high-energy astroparticle propagation

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What is this contribution about?

- CRPropa: public framework for the propagation of high-energy particles
- treatment of CRs, neutrinos, gamma rays, electrons
- 1D, 3D, and "4D" simulations possible

Why is it relevant?

- CRPropa enables a self-consistent interpretation of observations with **multiple messengers**
- **modular design** enables easy customisation for various applications in astroparticle physics
- treatment of interactions above TeV (for CRs) and GeV (for gamma rays)

What have we done?

- improved algorithm for Galactic CR propagation
- new Galactic magnetic field models
- targeting algorithm to speed up 3D/4D simulations
- native treatment of electromagnetic interactions
- new channels for photon production
- new interpolation methods

What is the result?

- advanced public code for multimessenger studies at high- and ultra-high energies

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