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The FRaNKIE code: a tool for calculating multi-wavelength interstellar emissions in galaxies

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The Fast Radiation transport Numerical Kalculation for Interstellar Emission (FRaNKIE) code is a Monte Carlo code for calculating the electromagnetic emissions in galaxies. The code is highly parallel and optimised for both CPUs and co-processor accelerators. The code takes into account the interaction of the photon field with the interstellar medium in a self-consistent way, providing a detailed model for the interstellar radiation field. I will describe the implementation details of the code and present results of its
application to the problem of calculating the interstellar radiation field of the Milky Way. The radiation field is an essential input to CR propagation codes for calculating the cosmic-ray lepton energy losses from inverse Compton
scattering and the resulting gamma-ray emission.

Collaboration

– not specified –

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