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Radiation modeling in high- and low-luminosity GRBs

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We model Gamma-Ray Burst (GRB) prompt spectra in the fireball internal shock scenario. This theoretical model assumes particles to be accelerated in collisions of plasma blobs in the optically thin regime. Usually, the observed prompt emission is attributed to synchrotron emission from accelerated electrons. Additional processes like inverse Compton scattering and photon-photon annihilation can shape the spectra, where inverse Compton emission might introduce an extra component at high energies. We model GRB spectra and light curves with AM3, a time-dependent radiative code. A special focus will be on high-energy emission in low-luminosity GRBs (LL GRBs) which might be observable with the future Cherenkov Telescope Array (CTA).

Primary author: RUDOLPH, Annika (Deutsches Elektronen-Synchrotron DESY)

Co-authors: WINTER, Walter (DESY); Prof. BOŠNJAK, Zeljka

Presenter: RUDOLPH, Annika (Deutsches Elektronen-Synchrotron DESY)

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