

- ▶ **GRB Observation-based Simulator (C++, IDL) – based on empirical distributions from BATSE data, extrapolated to LAT energies:**

- **Peak Fluxes**
- **Durations**
- **Pulse Widths (E)**
- **Spectral Power-laws**

LAT profiles – single power-law spectra

GBM profiles – broken power-law spectra

- ▶ **Possible Refinements (✓ indicates plan to implement before DC2)**

- **Pulse clustering**
- ✓ **Refined pulse-width energy dependence**
- **Spectral softening across burst duration**
- ✓ **EGRET/BATSE cross-calibration of power-law index distribution**
- **Duration and E_{peak} dependences on peak flux**
- ✓ **Redshift-dependent attenuation by IR background**
- **Energy- & Redshift-dependent temporal dispersion (QG theory)**