Galactic & Unidentified sources

Working Group 2

Wiki site

- **Wiki site for Galactic & Unidentified sources**

  Bibliography pointing to ADS/astroph papers

  Host to relevant proceedings

  Book reviews

  Image gallery

  WG-2 reports

- **Interactive page**

  http://www-glast.stanford.edu/cgi-prot/wiki?GalacticUnidSources

- **Read-only, public page**

  http://www-glast.stanford.edu/cgi-bin/wiki

News

- **Variability analysis of EGRET sources (P. Nolan)**
  - Population of variable sources in the inner Galaxy
  - Var. estimates based on published fluxes and χ^2 not too reliable

- **New Parkes pulsars = possible counterparts to EGRET sources (A. Harding)**

- **New wavelet detection of sources (R. Terrier+I. Grenier):**
  - tested & validated on EGRET data (significance, position, flux)
  - Incorporate the PSF(E) dependance for GLAST in the near future

- **TeV electron detection by GLAST and their origin in the local medium (R. Terrier + I. Grenier)**
  - Applying cuts for p and e showers at all incident angles => large sensitive area for electron detection ($5 \cdot 10^5$ e/yr at 100 GeV, $2 \cdot 10^3$ e/yr at 1 TeV) & good e/p rejection
  - Model of the origin and propagation in the nearby ISM

- **Interstellar emission workshop**
  next year in Paris, to bring IS radiation field and ISM experts

Observation simulator tools

- **Observing mode**

  Default = scanning mode

  Specific problems to be addressed for pointed mode ?

- **Goal**

  evaluate the GLAST scientific performance

  > in tricky, but clear-case situations
  >
  > a reasonable, but feasible challenge
  >
  > « quantify » & « prioritize » the list of proposed tests
  >
  > who does what?

- **Recommendations**

  Steady sources should have Poisson noise

  All photons should be time-tagged

Problem	Tool	Free parameters	Location
Source confusion	3 nearby sources	increasing flux difference increasing spectral difference	at low latitude at high latitude
Souce/IS clump discrimination	2 interstellar clumps and 1 source	clump = pt-source with IS spectrum	in a complex (Cyg_like) region
Position biases	source	different spectral indices	on a steep background slope (near a big cloud)
Pulsar physics	pulsar ltc with sp. variations with phase: 1 bright & 1 faint Ms psr with IC peak at 10 TeV		at low latitude
Period folding blind period search	one 100-ms-pulsar lightcurve with a known ephemeris, one ms pulsar lightcurve	a double-peaked ltc, a broad single-peaked ltc a low amplitude sine-like ltc	at low latitude
binary sources: period folding & period search	Source with known orbital ephemerides with low-amplitude sine-like flux modulation	day-timescale LAT orbital period timescale	at low latitude
Extended/ point-sourceseparation	extended SNR with a smaller perion nebula and a pt-source	SNR with π^0 bump -1 & -2 sp. index for plerion	at low latitude
Sensitivity to variability	a transient source a constant source	month-week-day-hour timescales, with two df/dt	at low latitude at high latitudes
Sensitivity to spectral variab.	a transient source	Timescales?	at low latitude at high latitude