ID contributo: **233** Tipo: **non specificato**

Very-high-energy steady spectrum of Crab nebula

venerdì 15 maggio 2009 14:55 (20 minuti)

The very-high-energy steady emission (beyond 50 GeV) of the Crab nebula is believed to originate from Inverse Compton scattering of low energy photons off energetic electrons. However, the mechanism accelerating the electrons to TeV energies and the resulting particle distribution are still a topic of debate. Benefitting from a wealth of data collected with ground-based gamma-ray observatories in the past decade (HEGRA, HESS II, MAGIC, VERITAS), we develop a simple one-zone interpretation of the steady-state Crab nebula spectrum in the range between 50 GeV and 100 TeV. Modeling the differential photon spectrum as inverse-Compton emission of far-infrared photons and electrons energized at the nebula termination shock with a log-parabola energy distribution, we estimate the parameters (index and curvature) of the log-parabola parent electron distribution, constraining the scale of the acceleration region and the anisotropy of the magnetic turbulence downstream of the terminati!
on shock. We conclude that the rise of the spectrum observed by Fermi-LAT originate from a distinct energetic particle population.

Relatore: Dr. FRASCHETTI, Federico (University of Arizona)

Classifica Sessioni: g-rays