

Contribution ID: 15

Type: **not specified**

The Fermi-LAT and H.E.S.S. views of the supernova remnant W49B

Tuesday, 5 July 2016 11:50 (20 minutes)

The supernova remnant (SNR) W49B originated from a core-collapse supernova that occurred between one and four thousand years ago, and subsequently evolved into a mixed-morphology remnant, which is interacting with molecular clouds (MC). SNR/MC associations are particularly interesting for probing the acceleration of hadrons in SNRs and consequently the origin of Galactic cosmic rays. The molecular material in the vicinity of the source acts as an efficient target material for accelerated particles, leading to an enhanced gamma-ray emission, making these kinds of sources of particular interest for gamma ray observatories.

W49B has been detected in gamma-rays at high energies (HE, 0.1-100GeV) and very high energies (VHE, > 100 GeV) with the Fermi Large Area Telescope (Fermi-LAT) and the High Energy Stereoscopic System (H.E.S.S.), respectively. The latest results obtained on W49B with these instruments will be presented. In particular, the spectrum shows a break at low energies, similar to previous observations by the Fermi-LAT in other SNRs and interpreted as the signature of a pion-decay gamma-ray emission. The implications of these results on the population of particles at the origin of the gamma-ray emission will be discussed.

Primary author: Dr BRUN, Francois (CENBG, CNRS/IN2P3, Bordeaux, France)

Co-authors: Dr KATSUTA, Junichiro (Hiroshima University, Hiroshima, Japan); Dr LEMOINE-GOUMARD, Marianne (CENBG - CNRS); Dr JOGLER, Tobias (SLAC National Accelerator Laboratory); Dr MARANDON, Vincent (MPIK Heidelberg)

Presenter: Dr BRUN, Francois (CENBG, CNRS/IN2P3, Bordeaux, France)

Session Classification: Gamma Ray Astronomy