



Contribution ID : 873

Type : **Poster**

H.E.S.S. sources possibly associated with massive star clusters

Friday, 6 July 2007 14:45 (0:00)

Abstract content

In view of the discovery of HESS J1023-575 (discussed in a separate presentation), we examine other very high energy (VHE) gamma-ray sources possibly associated with massive star clusters. Particle acceleration in massive star forming regions can proceed at the interface of two interacting winds or result from a collective process; multiple shock acceleration or MHD turbulence. The gamma-ray emission can either take place in the shell at the edge of the superbubble blown by the winds and multiple supernova explosions. Non-thermal radiation from the shell structure then trace the interaction of energetic particles (ions and/or electrons) with the surrounding interstellar matter. In particular, HESS J1837-069 is spatially coincident with a recently discovered very massive star cluster. We discuss the VHE gamma-ray data resulting from H.E.S.S. observations on this or other possible such associations. We consider data in other wavelength domains, in particular in X-rays, and examine the available evidence that the VHE emission could originate in particles accelerated by the above-mentioned mechanisms in massive star clusters.

If this papers is presented for a collaboration, please specify the collaboration

HESS collaboration

Summary

Reference

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olivo, Gustavo Medina-Tanco, Lukas Nellen, Federico A. Sánchez, José F. Valdés-Galicia (eds.); Universidad Nacional Autónoma de México, Mexico City, Mexico, 2008; Vol. 2 (OG part 1), pages 787-790

Primary author(s) : Dr. MARCOWITH, Alexandre (LPTA, Université Montpellier 2, CNRS/IN2P3, Montpellier, France); Dr. GALLANT, Yves (LPTA, Université Montpellier 2, CNRS/IN2P3, Montpellier, France); Dr. KOMIN, Nukri (LPTA, Université Montpellier 2, CNRS/IN2P3, Montpellier, France)

Co-author(s) : Dr. PUEHLHOFER, Gerd (Landessternwarte Universität Heidelberg, Germany); Dr. REIMER, Olaf (Institut für Theoretische Physik, Lehrstuhl IV: Weltraum und Astrophysik, Ruhr-Universität Bochum, Germany); Dr. HORNS, Dieter (Institut für Astronomie und Astrophysik, Universität Tübingen, Germany)

Presenter(s) : Dr. MARCOWITH, Alexandre (LPTA, Université Montpellier 2, CNRS/IN2P3, Montpellier, France); Dr. KOMIN, Nukri (LPTA, Université Montpellier 2, CNRS/IN2P3, Montpellier, France)

Session Classification : Posters 2 + Coffee

Track Classification : OG.2.2