30th International Cosmic Ray Conference

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HESSJ1023-575: Non-thermal particle acceleration associated with a young stellar cluster?

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Abstract content

The results from H.E.S.S. observations towards Westerlund 2 are presented. The detection of very-high-energy gamma-ray emission towards the young stellar cluster Westerlund 2 in the HII complex RCW49 by H.E.S.S. provides ample evidence that particle acceleration to extreme energies is associated with this region. A variety of possible emission scenarios will be reviewed, ranging from high-energy gamma-ray production in the colliding wind zone of the massive Wolf-Rayet binary WR20a, collective wind scenarios, diffusive shock acceleration at the boundaries of wind-blown bubbles in the stellar cluster, and outbreak phenomena from hot stellar winds into the interstellar medium. These scenarios are compared to the characteristics of the associated new VHE gamma-ray source HESSJ1023-575, and conclusions on the validity of existing emission scenarios for high-energy gamma-ray production are drawn.

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

H.E.S.S. 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 567-570

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