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SNR interacting with molecular clouds as seen by HESS

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Supernova from massive stars are exploding in giant molecular cloud (MC). Thus it is possible to see supernova remnants (SNR) expanding in dense material. The physical interaction between SNR and MC can produce OH maser (1720 MHz) emission tracing the shocked surrounding medium.

High and very-high energy (HE and VHE) gamma rays have been detected in coincidence with OH maser, SNR and shocked MC. Neutral pions decay is the best model to explain the origin of the gamma-ray emission.

I will present some joined results of HE and VHE gamma-ray experiments of known cases as IC443, W44, W28 and W51C as seen by H.E.S.S. and Fermi-LAT to study in an easier way the morphology and the spectra.

The very good angular resolution of H.E.S.S. analysis reconstruction methods is useful to model the morphology in the GeV range, and the HE spectra is helpful to constrain the gamma-ray origin.

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Classification de Session: Cosmic ray sources: Multiwavelength observations