

## ABSTRACT ONLY

### OBSERVATIONS OF SUPERNOVA REMNANTS AND MOLECULAR CLOUDS FROM THE MM TO THE GAMMA-RAY DOMAIN: BRIDGING LOW- AND HIGH-ENERGY COSMIC RAYS

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Evidence that cosmic rays (hadronic component) are accelerated by supernova remnant shocks all the way from low energies to high energies, has come from recent works combining gamma-ray observations in the sub-GeV to TeV domain on the one hand, and in the submm-mm domain on the other hand. These observations concern the specific cases of supernova remnants interacting with molecular cloud complexes, that have long been suspected to be ideal laboratories to study in situ cosmic ray acceleration and diffusion. I will summarize recent results showing enhanced gamma-ray emission from neutral pion decay, as well as enhanced ionisation (both by at least one order of magnitude with respect to average galactic values), in several regions of massive star formation housing supernova remnants interacting with molecular cloud complexes. However much work remains to be done to understand cosmic ray penetration and diffusion inside and around molecular clouds, and reveal the actual spectrum of the accelerated cosmic rays.

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