

Contributed Talk //



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The spectral shape of the gamma-ray emission observed for dynamically old supernova remnants that interact with molecular clouds triggered an exciting scenario of adiabatic compression and farther re-acceleration of Galactic cosmic rays (GCRs) in radiative shells of the remnants, which was extensively discussed and applied to various sources over recent years. Indeed, the observed gamma-ray spectrum from a number of remnants strongly resembles the expected spectrum of the gamma-ray emission from the compressed population of GCRs. In this contribution we discuss the feasibility of this scenario and show that it is very unlikely that compressed GCRs could produce sufficient amount of gamma-rays and that the observed spectral shape is putting strong limits on the allowed compression factors. Further, absence of curvature in featureless power-law spectra of evolved supernova remnants at radio wavelengths is strongly disfavouring the compression scenario for electrons and hence for hadrons.

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