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**The future of ground-based gamma-ray astronomy: SNR and cosmic rays** MARTIN POHL, Iowa State University, WORKING GROUP COSMIC RAYS/SNR TEAM — Recently, the Division of Astrophysics of the American Physical Society requested the preparation of a White Paper on the status and future of ground-based gamma-ray astronomy. A number of science working groups have formed to explore the scientific questions that may be addressed with a future observatory. Here we report preliminary findings of the working group *Supernova remnants and cosmic rays*. Among the most pressing questions are the following: Are cosmic rays above the knee really Galactic in origin? What is the origin of the spectral break at 3 PeV known as the knee? What is the spectrum of cosmic ray electrons above 1 TeV? What is the origin of the extended sources which are very bright in TeV gamma-rays, but remain almost silent at lower frequencies? Are isolated SNRs the main sources of cosmic ray ions? Do shocks in SNRs produce strong magnetic-field amplification and is the particle acceleration process efficient enough to account for this? Due to the ubiquitous presence of shocks and high-energy particles in the universe, these questions will impact a large number of applications in astrophysics and cosmology, but are also related to problems in plasma fusion research. A key to answering them with any future VHE observatory will be the unambiguous disentanglement of emission from electronic versus hadronic cosmic rays.

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