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## **Review talk: The surprising effectiveness of cosmic ray acceleration**

*Monday, 5 September 2022 09:30 (55 minutes)*

Cosmic rays are accelerated to a few PeV, and maybe 100PeV, in the Milky Way Galaxy. They are accelerated beyond 100EeV elsewhere. If I did not know better, I would say this could not happen, especially with such high efficiency. In this talk I discuss how acceleration to these energies pushes against the limits of theoretical credibility and how the underlying plasma physics has to be finely tuned to reach observed cosmic ray energies.

### **Collaboration**

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**Session Classification:** Theory of Particle Acceleration in Astrophysical Environments