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# Magnetized turbulent plasmas as high-energy particle accelerators

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How magnetized turbulent plasmas can accelerate charged particles is a long-standing question dating back to the seminal work of Enrico Fermi in the late 1940s. Nowadays, it is often invoked to model the production of non-thermal particle spectra in a variety of astrophysical settings, including extreme, relativistic sources such as black hole accretion disks, pulsar wind nebulae, or relativistic jets from active galactic nuclei. This presentation will review recent progress in this area and propose a modern theoretical picture of the physics at play, which is supported by numerical simulations, and which can be seen as a generalization of the original Fermi scenario. It will then discuss some phenomenological consequences in high-energy multi-messenger astrophysics.

## Collaboration(s)

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