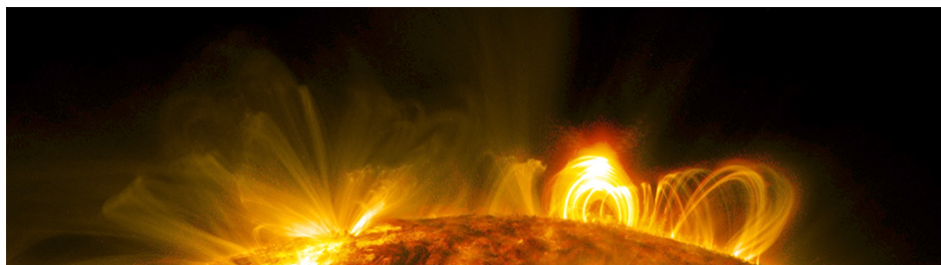


Particle Acceleration in Solar Flares and the Plasma Universe – Deciphering its features under magnetic reconnection



Contribution ID: 57

Type: **Invited talk**

Extreme particle accelerators

Thursday, 18 November 2021 12:00 (30 minutes)

I will talk about the perfectly designed by Nature machines - Cosmic Ray Factories accelerating particles - electrons and protons - with a rate close to the theoretical margin allowed by classical electrodynamics and magnetohydrodynamics. For a long time, we suspected the Crab Nebula as an extreme electron accelerator. After the recent detection of PeV gamma-rays from the Crab, we have direct evidence that it operates as an extreme electron accelerator. The highest-energy particles of 10^{20} eV observed in cosmic rays provide the most convincing case of extreme proton accelerators linked, most probably, to relativistic jets driven by supermassive Black Holes. I will discuss the role of these objects in the context of the origin of galactic and extragalactic cosmic rays.

Primary author: AHARONIAN, Felix (DIAS/Dublin and MPIK/Heidelberg)

Presenter: AHARONIAN, Felix (DIAS/Dublin and MPIK/Heidelberg)

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