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Type: **Oral contribution**

Cosmic ray streaming instability generated in the intergalactic medium

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We solve the Vlasov equation describing the escape of cosmic rays (CRs) from a point source, in the case when the Larmor radius is smaller than the coherence scale of the cosmological magnetic field in which CRs are propagating, right after leaving the source. The electric current that follows from this calculation is used to calculate the growth rate of a non-resonant instability. We study the effect of such instability on CR propagation and we compare the growth rate with typical time scales relevant for the source, as the lifetime. We find that particles with energies less than a critical value (which depends on CR luminosity and distance from the source) are self-confined.

We also discuss the development of this instability as due to a current of CRs associated with the anisotropy in the distribution of their sources in the intergalactic medium.

Collaboration

– not specified –

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