

Colloquium

Testing cosmic ray acceleration in the laboratory

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Recently it has become possible to simulate interesting astrophysical processes in the laboratory with high power lasers, e.g. we have observed amplification of seed magnetic fields by plasma turbulence generated by laser-produced colliding plasma flows. Such turbulent and magnetized plasmas drive plasma instabilities that are seen to energise electrons above the thermal background, exemplifying an injection mechanism for cosmic ray acceleration. An ongoing experiment is studying whether 2nd-order stochastic Fermi acceleration can indeed occur in such environments. We cannot yet create an universe in the laboratory - but a supernova seems possible!

Wednesday, Sep 4th 2019

11:30 AM (Tea/Coffee at 11:00 AM)

Auditorium, TIFR-H