SEMPARIS – Séminaires en région parisienne

http ://string.lpthe.jussieu.fr/semparis/

Seminar of the theory group of APC

Mardi 2 Mai 2017, 14 :00
APC, 483 A - Malevitch
Domaines : hep-th

Titre : *Chiral electrodynamics in astrophysics and cosmology*

Orateur : **Günter Sigl (University of Hambourg)**

Résumé : *An asymmetry between left- and right-chiral lepton states can induce additional contributions to the electromagnetic current in the presence of magnetic fields or vortical fluid flows. In contrast to the usual Ohmic current these chiral currents are dissipationless. They can lead to instabilities such as the chiral magnetic effect in which magnetic fields can undergo an exponential growth phase, similar to the dynamo effect. We discuss astrophysical and cosmological contexts in which such effects may play a role, such as core collapse supernovae and magnetogenesis in the early Universe. Many open questions, however, remain some of which will also be discussed.*