

La Prof.ssa Daniela Grasso (CNR & Politecnico di Torino) terrà un seminario di Fisica Matematica dal titolo *Magnetic Reconnection*, promosso dal Dipartimento di Matematica e Fisica.

*Abstract:* "The process of magnetic field line reconnection is at the heart of many events in space and laboratory plasmas. It is believed that such a process can explain the fast release of magnetic energy into particles acceleration in the solar corona and earth magnetosphere (solar flares and boreal aurora) as well as the sudden crash of the central temperature of the plasma in fusion devices (sawtooth crashes).

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High temperature plasmas, such as the ones in the solar corona or in the present-day tokamak experiments, are characterized by very low value of the resistivity. Under these conditions the motion of the magnetic field lines is frozen into the plasma motion, but for those regions, close to nulls of the magnetic field, where resistivity, or other effects, can play a role. In these regions the motion of the magnetic field lines is allowed to decouple from the plasma motion. Magnetic field lines can tear and reconnect changing their topology. Here we give a description of this phenomena on the basis of the MagnetoHydroDynamic (MHD) model and illustrate the typical problems related to this process."

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