CEA – Saclay, 91191 Gif-sur-Yvette Cedex

Service de Physique de l'Etat Condensé - UMR 3680

SÉMINAIRE

Mercredi 24 janvier 2018 à 11h15

Orme des Merisiers SPEC, Salle Itzykson, Bât.774

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Topological origin of equatorial waves

The concept of topologically-protected transport along the edge of physical systems was born three decades ago in the context of quantum Hall electronics. Physicists realized recently that topological protection applies to virtually all areas of physics from photonics, to cold atoms and even classical mechanical systems. Waves turn out to be protected from disorder and backscattering when emerging at the boundary separating bulk materials characterized by different topological invariants. We will show that Eastward propagating heat waves involved in El Nino phenomenon have a topological origin. We will relate their topological properties to the dual role of Coriolis force, that breaks time-reversal symmetry, and changes sign at the equator thereby trapping waves at the boundary between the two hemispheres.

A coffee break will be served at 11h00. The seminar will be given in English.

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