

## ANUNCIO DE SEMINARIO

### Coupling fluid permeation and large deformation in polymer gels

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#### Resumen:

A polymer gel is a two-component material composed of an elastic cross-linked polymer network and a fluid that permeates the interstices of the network. Such materials exhibit unusual and complex phenomena as a result of the coupling between large deformation and fluid permeation.

In this talk, we present a continuum theory for the mutual interaction between large deformation and fluid permeation in polymer gels. The basic tenet here is the conceptual view of this body as a platform for two interdependent phenomena: a macroscopic (mechanical) phenomenon due to the deformation of the network and a microscopic (chemical) phenomenon due to the permeation of the fluid through the network.

Applications of the theory are provided within the context of volumetric phase transition, cavitation and pressure-driven fluid flow through a gel-filled channel.

El Dr Fernando Pereira Duda es Doctor por la Universidad Federal de Rio de Janeiro. Es actualmente Profesor Asociado del COPPE y Jefe de Departamento. Se encuentra en CIMEC realizando una estadía por un proyecto de colaboración con los Dres Alfredo Huespe y Pablo Sánchez.