CICLO DE SEMINARIOS 2010

SMAT-C Soft Matter Research and Technology Center

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"Dynamics of degassing in an immersed granular medium"

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We investigate the dynamics of gas rising through an immersed granular medium. First, we focus on the location of gas emission at the surface ('*venting*'). When submitted to an ascending gas flow, the immersed granular layer can act as a porous medium (invasion), a fluid (flowing), or a solid (fracturing). The characteristic size of the region where bubbles are emitted at the surface varies as the square root of the granular layer height. Comparison between 2D and 3D experiments, as well as a simple analytical and numerical model, point that this phenomenon can be explained in terms of a diffusion process. When the water height above the granular layer is large, we observe the formation of a crater consisting of two symmetric dunes growing and moving away from each other. The characteristic size of the crater evolves logarithmically with time, independently of the regime of gas emission. A simple model taking into account the successive advection and deposition of grains accounts for this observation.

MARTES 14 DICIEMBRE, 13:00 HORAS

Sala Conferencias, Tercer Piso - Departamento de Física
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