

**Ben-Gurion University of the Negev  
Blaustein Institutes for Desert Research**

The Swiss Institute for Dryland Environmental and Energy Research  
Alexandre Yersin Department of Solar Energy and Environmental Physics

## **Instability of extensional flows**

*Roiy Sayag*

*Alexandre Yersin Department of Solar Energy &  
Environmental Physics  
SIDEER, BIDR, BGU*

### ABSTRACT

The interface of a fluid that displaces another fluid in a quasi- two dimensional geometries can develop fingering patterns, which are common to a wide range of natural systems. It is believed that such interfaces remain stable, having planer or circular shapes, when the displacing fluid is more viscous (less mobile). However, some systems, such as ice sheets or squeezed pastes, develop fingering patterns in spite of having a more viscous displacing fluid.

I will show that a more viscous displacing fluid can develop fingering patterns if that fluid is nonlinear and is discharged axisymmetrically along frictionless boundaries. Unlike the classical viscous fingering, the patterns we observe resemble tears and their characteristic wavelength progressively grows.

**Date & Location:**

**Tuesday, June 4, 2019, 11:00**

**Lecture room, Physics Building (ground floor)**

