



Contribution ID: 8

Type: **Talk**

## Imaging and mechanics of liquid foam flows

*Friday, 16 September 2011 15:20 (20 minutes)*

Liquid foams are surprising materials, even though common in our everyday life. Their structure is mainly made of gas bubbles surrounded by a continuous liquid phase and stabilized by surfactants. Owing to this multiphasic composition, they behave like solids when submitted to small stress, and flow like liquids beyond a critical yield stress. These intermediate properties directly lead to numerous applications from food processing to ore/oil extraction.

Coupling mechanical measurements with direct observations of the structure is necessary to understand their behavior and design foams with prerequisite properties.

Different experimental approaches and results will be presented. They overcome the fact that foams are very diffusive at optical wavelengths.

First, the use of 2D systems, which consist of bubbles monolayers, allows to get important insights about bubbles deformation and dynamics and to develop original tools to link their structure and mechanical properties. Second, the use of high speed X-ray tomography, which recent development has shown to be a promising non intrusive method, allows to track individually thousand of bubbles inside real 3D foam.

### Please specify the session

imaging

### Please specify poster or talk

talk

**Primary author:** Dr RAUFASTE, Christophe (University of Nice, LPMC)

**Co-authors:** Dr DOLLET, Benjamin (University of Rennes, IPR); Mr MADER, Kevin (PSI); Dr MOKSO, Rajmund (PSI); Dr SANTUCCI, Stéphane (ENS Lyon)

**Presenter:** Dr RAUFASTE, Christophe (University of Nice, LPMC)

**Session Classification:** Imaging

**Track Classification:** Imaging