

Special PHYSICAL MATHEMATICS SEMINAR

PLAYING WITH MICROFLUIDIC DROPLETS

PATRICK TABELING

Microfluidics, MEMS & Nanostructures
Ecole Supérieure de Physique et de Chimie Industrielles
(MMN ESPCI, France)

ABSTRACT:

We present several experiments performed with droplets driven in PDMS based microfluidic systems. In one case, we use actuators to introduce localized perturbations on a chip, close to where droplets are formed. We obtain Arnold tongues and devil staircases leading to the formation of well synchronized or quasiperiodic-like droplets. In another case, we study droplet breakup occurring at microfluidic junctions. We reveal the existence of a critical length that controls the process.

WEDNESDAY, MAY 10, 2006

3:00 PM

Building 2, Room 136



Massachusetts Institute of Technology
Department of Mathematics
Cambridge, MA 02139