OIST SEMINAR

Date: April 16th, 2015 (Thu)
Time: 4:00 pm – 5:00 pm
Venue: C209, Seminar room
Speaker: Prof. Stephen W. Morris
(University of Toronto, Canada)

Cracking Lava into Columns

Abstract

Columnar joints are three-dimensional fracture networks that form in cooling lava flows. The network breaks the solid lava into an array of nearly hexagonal columns with an uncanny degree of order. Famous examples include the Giant's Causeway in Northern Ireland, Fingal's cave in Scotland, The Devil's Postpile in California and Kume Island, near Okinawa. The same pattern can be observed on a smaller scale in drying corn starch, and in some other materials. We have made the first three dimensional study of the evolution of the network in corn starch and relate these observations to the mature patterns observed in field studies of lava flows. Starch columns are 1000 times smaller than their lava counterparts. We have solved a 300 year old geology problem by figuring out what sets the scale of the columns in both cases.

Contact information: Fluid Mechanics Unit
Kaori Egashira: (Tel) 098-966-8683 (e-mail) e-kaori@oist.jp