Map

Transportation

> Bus
5511 , 5513 , 5517 , 5613 , 6511 , 5614 , 6512 , 6513 , 750 , 5528 , 6514 , 5522 , 5412 , 501 , 502 , 5411 , 6003

> Subway
Seoul National University Station on Seoul Subway Line 2, Exit No. 3
(Take the school shuttle bus, a city bus, or a taxi.)

Parking

Use the Grand Stadium Parking lot or designated parking spots on campus.

> Hours of Operation
00:00~24:00 (Parking fees are applicable depending on time.)

> Parking fees
Minimum1,500 Korean won/30 min., 500 Korean won per 10 min. thereafter.

Contact Info.

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Open KIAS Public Lecture

Lecture by the Boltzmann Medalist

Emergence of Patterns in Physical, Chemical, and Biological Systems

16:30~, July 21, 2013

Auditorium (1F), Museum of Art (MoA),
Seoul National University, Korea

KIAS KOREA INSTITUTE FOR ADVANCED STUDY

Welcome Message

The Korea Institute for Advanced Study invites you to a public lecture with Prof. Harry L. Swinney, this year's Boltzmann Medalist.

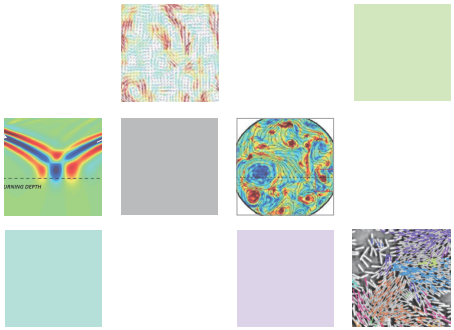
The Boltzmann Medal is the most prestigious prize in the field of statistical physics, awarded to physicists whose achievements have made exceptional contributions to the advancement of the field. The Medal is awarded once in every three years during the STATPHYS conference by the Commission on Statistical Physics of the International Union of Pure and Applied Physics (IUPAP).

One of the two Boltzmann Medalists of 2013, Prof. Harry L. Swinney is a pioneer in the field of chaos theory. He has led the study of nonlinear dynamics for the last 40 years and was the first to achieve the observation of Turing instabilities in chemical dynamics. Prof. Swinney was awarded the Boltzmann Medal for his ingenious and challenging experiments which have had a significant impact on many areas of statistical physics.

Prof. Swinney will give a talk on 'Emergence of Patterns in Physical, Chemical, and Biological Systems', a theme accessible to all fascinated with this field. We note that English will be the medium of communication.

We look forward to your positive response and participation.

President of KIAS
Doochul Kim



Abstract

The emergence of patterns is one of the world's most durable mysteries. Some patterns (clouds, zebra stripes) form in space, while others vary in time (e.g., cardiac and circadian rhythms).

We consider ordered patterns that emerge in systems driven away from the uniform state (thermodynamic equilibrium) by imposing different temperatures, pressures, or nutrient concentrations on opposite boundaries of a system.

Experiments and theory reveal that similar patterns often emerge in quite different systems. For example, spiral patterns appear in frog eggs, fibrillating hearts, and ocean eddies, and similar fractal (noninteger dimension) wrinkling occurs in some leaves, flowers, and torn plastic sheets. The discovery of mathematically similar patterns in diverse systems suggests that there exist general principles describing the emergence of patterns in systems driven away from the uniform state.