

MIT DEPARTMENT OF MATHEMATICS

SIMONS LECTURES IN MATHEMATICS

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Courant Institute of Mathematical Sciences, NYU
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May 1 • 2 • 3, 2006

4:30–5:30pm

MIT Room 32–155

Reception at 4pm

The arithmetic theory of quadratic forms

Lecture 1

A quick history of the arithmetic
of quadratic forms, from Gauss to Siegel.

Lecture 2

Quadratic forms via harmonic analysis.

Lecture 3

Quadratic forms via p-adic dynamics.



Yves Couder

Ecole Normale Supérieure, Paris
Université Paris 6 & 7

May 8 • 9 • 10, 2006

4:30–5:30pm

MIT Room 32–155

Reception at 4pm

On three problems of pattern formation in physics and botany

Lecture 1

The geometry and dynamics of plant growth:
phyllotaxis as seen by physicists.

Lecture 2

On hierarchical 2D space dividing patterns;
leaf venation, cracks, town planning.

Lecture 3

On the dynamics and self organization of
a wave-particle association at a macroscopic scale.

