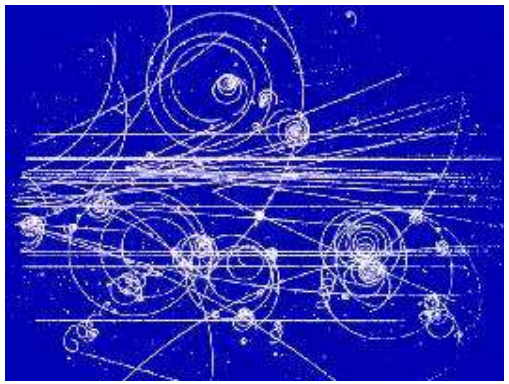

Course Announcement: Spring 2008, Department of Mathematics, Florida State University

NONCOMMUTATIVE GEOMETRY:
FROM PARTICLE PHYSICS
TO NUMBER THEORY

Matilde Marcolli
(Max Planck Institute for Mathematics and FSU)

Outline of the course:

Hopf algebras and perturbative renormalization in quantum field theory
Feynman motives and the Riemann-Hilbert correspondence
Particle physics models via noncommutative geometry
Quantum statistical mechanics of arithmetic dynamical systems
The Riemann zeta function: quantum mechanics and noncommutative geometry
Noncommutative geometry and motives — thermodynamics

Reference:

Alain Connes and Matilde Marcolli, *Noncommutative Geometry, Quantum Fields, and Motives*, American Mathematical Society, 2007.