

## **Symposium on Classical and Quantum Billiards**

**Centro Stefano Franscini, Monte Verità, Ascona, Switzerland**

**July 25–30, 1994**

### **PROGRAM**

#### **Opening Lecture**

M. Berry

Enclosed rays and waves

#### **Tutorial Lectures**

O. Bohigas

Spectral fluctuations: Random matrix theories and chaotic dynamics

L. Bunimovich

Markov approximations for billiards

M.-J. Giannoni

Hyperbolic billiards and arithmetical groups

N. Simányi

Global ergodicity of hyperbolic billiards

U. Smilansky

The scattering approach to the semiclassical quantization of billiards

F. Steiner

Trace formulae for quantum billiards

M. Wojtkowski

Local ergodicity in nonuniformly hyperbolic Hamiltonian systems

#### **Seminar Lectures**

E. Bogomolny

Distribution of eigenvalues for the modular billiard

G. Gallavotti

Correlation decay in billiards. Nonequilibrium ensembles

M. Gutzwiller

Poincaré sections for quantum billiards

E. Heller

Time-dependent semiclassical methods in the stadium billiard

A. Krámli

Exponential correlation decay and the method of Markov grids

J. Lebowitz

Non-Gaussian energy level statistics for some integrable billiard systems

A. Richter

Properties of eigenmodes in superconducting billiards and evidence for nonexponential decay of quantum systems with classical chaotic dynamics

P. Sarnak

Quantum unique ergodicity

J. Smillie

A partial survey of results on polygonal billiards

D. Szász

(Globally) ergodic hyperbolic billiards

### Half-Hour Talks

L. Bunimovich

Variational principle for hyperbolic billiards and a search for their periodic trajectories

G. Casati

Decay of correlations in billiards

Y. Colin de Verdière

Unstable closed trajectories and semiclassical limits

V. Donnay

Elliptic islands in generalized Sinai billiards

P. Gaspard

$\hbar$ -expansion and the quantization of billiards

E. Heller

Recent experiments with wave mechanics in billiards

C. Liverani

Decay of correlations

R. Markarian

Open billiards: Conditionally invariant measures and Cantor sets

S. Tabachnikov

On dual billiards

A. Voros

“Stellar representation” of quantum billiard eigenfunctions

**Closing Lecture**

Y. Sinai

Some applications of the theory of billiards

**Poster Sessions**

July 25, 26, 28