

List of publications

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Every completed publication can be downloaded from the
<http://www.renyi.hu/~mogy/publications/> address.

I. In preparation

- Exponential Decay of Correlations in Multi-dimensional Dispersing Billiards; joint with Péter Bálint;

II. Papers in refereed international journals:

- Hyperbolicity in multi-dimensional Hamiltonian systems with applications to soft billiards; joint with Péter Bálint; Discrete and Continuous Dynamical Systems, Series A **15** 37-59 (2006)
- Correlation Decay in certain soft billiards; joint with Péter Bálint; Communications in Mathematical Physics **243** 55-91 (2003)
- Mixing and its rate in ‘soft’ and ‘hard’ billiards motivated by the Lorentz process; joint with Péter Bálint; Physica D **187** 128-135 (2004)
- Multidimensional Semi-Dispersing Billiards: Singularities and the Fundamental Theorem; joint with Péter Bálint, Nikolai Chernov and Domokos Szász; Annales Henry Poincaré **3** 451–482 (2002)
- Geometry of Multidimensional Dispersing Billiards; joint with Péter Bálint, Nikolai Chernov and Domokos Szász; Astrisque **286** 119–150 (2003)

III. Diploma thesis, PhD thesis

- Ergodicity and Correlation Decay in Billiards; PhD thesis; Budapest University of Technology and Economics, Faculty of Science (2005)
outline and summary in Hungarian also downloadable from
<http://www.renyi.hu/~mogy/publications/>
- Interdiffusion in Ionic Crystals; Physicist’s diploma thesis (in Hungarian); Lajos Kossuth University (Debrecen), Faculty of Science (1998)

IV. Open problems in Billiards

attempt to collect today’s problems of Billiards Theory into an on-line database
(joint with Péter Bálint and Domokos Szász)
<http://www.math.bme.hu/~mogy/open/>

V. Material appeared in conference-printouts

- Hyperbolicity in Multi-dimensional Soft Billiards; summary of talk at the workshop Applied Mathematics and Computational Physics (Göd, Hungary, 30 April – 1 May 2004)
- Correlation Decay in Billiards; summary of talk at the workshop Applied Mathematics and Computational Physics (Göd, Hungary, 12-13 April 2003); joint with Péter Bálint;

VI. Teaching

- Proposal for the detailed practice course material and exercises of the subject “Mathematics A1”; (2006) (in Hungarian); published on-line:
<http://www.renyi.hu/~mogy/publications/>

VII. Material of numerical investigations

The items here are roughly documented programs and results obtained from them.

All documentation is in Hungarian.

All items can be downloaded from <http://www.renyi.hu/~mogy/publications/>

- Correlation decay of the function $f(x) = 3x(\text{mod}1)$ on a lattice (2005)
- Numerical investigation of scattering on circularly symmetric potentials in connection with correlation decay of soft billiards; (2004)
- numerical investigation of the inversion number of cycles (2004)
- Spectrum of the invariant measure for a random iterated function system (2001)