

Tuesday and Thursday from 10am-12pm
Mini-course by Ke Zhang (University of Toronto, Canada)

Title: KAM and formal methods for convex billiards

Abstract: We discuss the methods of KAM theory and formal power series as applied to the study of convex billiards. While traditionally KAM method is used to construct invariant curves of Diophantine rotation numbers, a KAM-like method can also be used to construct billiards with rational invariant curves. In another direction, by combining KAM methods with formal power series, one can construct formally integrable billiard (after a construction of Treschev). Finally, methods of formal power series can also be used to study spectral rigidity of billiards.