Quantum Billiards

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Particle in a box is one of those basic problems in quantum mechanics on which our understanding and intuition rests heavily. We shall consider the classical and quantum description of this problem for the integrable and non-integrable situations. We will see how, in this remarkably difficult area of research, it has nevertheless been possible to obtain some analytically exact results. The talk will explore connections between quantum chaos, random matrix theory, and exactly solvable models.