Abstract

The aim of the semi-classical trace formula is to derive properties of the eigenvalues of a Schrödinger operator H_h in the semi-classical regime where h, the Planck constant, is very small.

We will derive a trace formula for Schrödinger operators in the semi-classical limit and the expression of the smoothed density of states known as Gutzwiller formula. Gutzwiller formula expresses the smoothed density of states in terms of periodic orbits of the classical limit.

We will give the asymptotics with optimal remainder estimate of the counting function of eigenvalues.