

[Dimassi, Mouez](#)

**Resonances for slowly varying perturbations of a periodic Schrödinger operator.** (English)

[Zbl 1025.81016](#)

[Can. J. Math.](#) 54, No. 5, 998-1037 (2002).

From the author's abstract: We study the resonances of the operator  $P(h) = -\Delta_x + V(x) + \varphi(hx)$ . Here  $V$  is a periodic potential,  $\varphi$  a decreasing perturbation and  $h$  a small positive constant. We prove the existence of shape resonances near the edges of the spectral bands of  $P_0 = -\Delta_x + V(x)$ , and we give its asymptotic expansions in powers of  $h^{\frac{1}{2}}$ .

Reviewer: [Ricardo Weder \(México City\)](#)

**MSC:**

- [81Q20](#) Semiclassical techniques, including WKB and Maslov methods applied to problems in quantum theory
- [35Q40](#) PDEs in connection with quantum mechanics
- [35B34](#) Resonance in context of PDEs

Cited in **3** Documents

**Keywords:**

[resonances](#); [semi-classical limit](#)

**Full Text:** [DOI](#)