

# Discrete spectrum of Schrödinger operators with oscillating decaying potentials

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*Abstract:* I will consider the Schrödinger operator  $H_{\eta W} = -\Delta + \eta W$ , self-adjoint in  $L^2(\mathbb{R}^d)$ ,  $d \geq 1$ . Here  $\eta$  is a non constant almost periodic function, while  $W$  decays slowly and regularly at infinity. I will discuss the asymptotic behaviour of the discrete spectrum of  $H_{\eta W}$  near the origin. Due to the irregular decay of  $\eta W$ , there exist some non semiclassical phenomena; in particular,  $H_{\eta W}$  has less eigenvalues than suggested by the semiclassical intuition.

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