Quasi-modes for the perturbed harmonic oscillator

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I'll present some recent result on concentration properties on phase-space for eigenstates of small perturbations of the semiclassical Quantum Harmonic Oscillator. The effect of the perturbation turns out to depend on the arithmetic properties of the frequencies of the oscillator. We will illustrate this type of effect by comparing the sets of semiclassical measures of sequences of eigenfunctions in the perturbed and unperturbed cases.