

Stability of the gapless pure point spectrum of self-adjoint operators

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Given a self-adjoint operator T on a separable Hilbert space, with pure-point and simple spectrum with accumulations at finite points, explicit conditions are stated on the eigenvalues of T and on the bounded perturbation V ensuring the global stability of the spectral nature of $T+V$. The proof of this result is obtained using a quantum KAM scheme.