Minisymposium 4 - Spectral Theory and Ergodic Operators

Spectral analysis of non-relativistic QED

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The energy spectrum of non-relativistic matter coupled to quantized radiation is known to be absolutely continuous in a large interval between the ground state energy and the ionization threshold. The nature of the spectrum near the ground state energy is not known so far. In this talk I will outline two proofs for its absolute continuity. The first one is based on a new Mourre estimate and the conjuagte operator theory of Amrein et al. in the generalized version of Sahbani. The second one makes use of the BFS renormalization transformation in a novel way. - This is joint work with Juerg Froehlich and I.M. Sigal.