On the accumulation spectrum of self-adjoint operators

Andreas Hinz
University of Munich, Germany

We develop a number of characterizations of the essential spectrum to obtain quantitative bounds for the distance of a real number from the essential spectrum of a self-adjoint operator in a Hilbert space. The notion of accumulation spectrum is introduced as a natural extension to possibly infinite numbers. For the special case of Schrödinger operators in L_2 this leads to a better understanding of the infimum of the essential spectrum and of a method to investigate the behavior of eigensolutions at infinity.