On the virtual level of N-body Schrödinger operators

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In this talk we study the behaviour of the resonance functions of the Schrödinger operator

$$H = -\Delta + V$$

in the case of a virtual level at the threshold of the essential spectrum. Based on an Agmon-type argument a new approach is presented to derive rates of decay of the resonance functions for $|x| \to \infty$. This technique is applied to multi-particle systems to analyse virtual levels of N-body Schrödinger operators. As a consequence, one can show that the Efimov-effect is absent in the case of $N \geq 4$ particles in dimensions $d \geq 3$ or for $N \geq 4$ fermions in dimension $d = 1$ and $d = 2$.