# Scattering theory of 2- and N-body quantum systems

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**Abstract**

Scattering theory belongs to the deepest and most elegant chapters of both Mathematical Physics and Operator Theory. Its goal is to describe complicated quantum evolution by a simpler evolution. It allows us to compute the so-called scattering cross-sections, which can be measured in experiments. From the purely mathematical side, scattering theory is a method to study operators possessing continuous spectrum.

I will discuss scattering theory of Schrödinger operators, starting with the 2-body case, and then discussing the N-body case. I will sketch formulate the property of asymptotic completeness of N-body systems, which for many years was regarded as one of the major open problems in mathematical physics.