

3rd ASRC TPI

Theory Lecture Series

Date: 13:30~ Monday, 14 November

Location: Room 302 ASRC Bldg.

Speaker: Dr. Emiko Hiyama
(RIKEN NISHINA CENTER)

Title: Gaussian Expansion Method and its application to atomic and nuclear physics

Abstract: Many important problems in physics can be addressed by the Schrodinger equation with high precision for three- and four-body systems. It is therefore of particular importance to develop methods for precision calculation for such problems. In the calculation of the three-body problem, nowadays, everybody can calculate this problem.

However, when we go to four-body problem, the calculation becomes hard numerically. To overcome this difficulty, I propose 'Infinitesimally-shifted Gaussian Lobe basis function'. Thanks to this proposal, we could calculate four- and five-body problem easily. In this lecture, I will review how to calculate quantum few-body problem and its application to atomic physics and nuclear physics.

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