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# THEORETICAL STUDY OF WEAKLY-BOUND TRIATOMIC SYSTEMS WITH FADDEEV EQUATIONS IN TOTAL ANGULAR MOMENTUM REPRESENTATION

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The long-lived interest to weakly-bound triatomic systems is stimulated by their connection with Efimov physics [1]. While the most studied system is the Helium trimer [2], there is a variety of other systems [3,4] like helium-alkali triatomic molecules under investigation. Although their bound states with zero total orbital momentum lie very close to the breakup threshold, some of those systems have also bound states with nonzero orbital momentum. These latter states are much less studied than the former due to the computational complexity. In order to deal with this computational complexity a theoretically sound and computationally effective method is required.

Here we present a method for solving the Faddeev equations in the total angular momentum representation. The method makes accurate calculations of bound states with arbitrary total orbital momentum value viable. We illustrate the method implementation with calculations of different weakly-bound triatomic systems.

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