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## Scaling of tetramer properties close to the unitary limit

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The universal properties of weakly bound tetramers close to the unitary limit are obtained by solving Faddeev-Yakubovsky (FY) equations for identical bosons with a zero-range interaction. The solution of these equations demand beside a short-range three-body scale another one for the four-boson system. We explore the correlation between trimer and tetramer energies are shown to be universal, and exhibits the effect of the new scale, which is conveniently represented by a scaling function depending only on dimensionless quantities. Furthermore, the effective range changes the scaling functions in a way distinct from variations of the three- and four-body short range scales. The universal scaling functions for trimer and tetramers are sensitive to the effective range, and in particular, the correlation between the positions of the four-atom recombination peaks. We show that the shift in the position of the tetramer resonance peaks for cesium atoms, coming from the finite effective range, are consistent with the existing experimental data for these broad Feshbach resonances.

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