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Four-Body Scale in Universal Few-Boson Systems

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We trace the perturbative refinement of the two-boson interaction – which augments an initial, unitary description by a finite effective range – up to the six-boson system. Hereby, we expose a significant dependence of the predicted ground-state energies of tetra-, penta-, and hexameres on details of the interaction which is resolved at distances much smaller than the effective range. We demonstrate how to remove this sensitivity from all \leq 6-boson systems numerically and semi-analytically with a single four-body contact parameter.

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