

Abstract Submitted  
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**Phase diagrams for mass-imbalanced few-body systems in one dimension** CONNOR MOREHEAD, NIRAV MEHTA, Trinity University — We have calculated the atom-dimer and atom-trimer scattering lengths, as well as the universal trimer and tetramer binding energies for mixtures of heavy (H) and light (L) particles in one dimension. All universal observables are presented as functions of the scattering length ratio ( $a_{HH}/a_{HL}$ ) and the mass ratio ( $m_H/m_L$ ). We present phase diagrams for the HHL and HHHL system indicating the number of universal bound states, the sign of the atom-dimer and atom-trimer scattering lengths, and the positions of the atom-dimer and atom-trimer zero-energy scattering resonances.

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