

Abstract Submitted
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Atom-trimer scattering lengths and four-body bound states for the one-dimensional “HHHL” system CONNOR MOREHEAD, NIRAV MEHTA, Trinity University — The energy spectrum and atom-trimer scattering length for a four-body system under one-dimensional confinement are presented. We consider an “HHHL” system of three heavy atoms and one light atom within the Born-Oppenheimer approximation with zero-range interactions. We present a “phase-diagram” on the $(m_H/m_L) - (a_{HH}/a_{HL})$ plane indicating the number of tetramer states and the sign of the atom-trimer scattering length.

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