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Efimov Physics in Li-6 Atoms¹ DAEKYOUNG KANG, ERIC BRAATEN, The Ohio State University, HANS-W. HAMMER, HISKP (Theorie), Universitaet Bonn, LUCAS PLATTER, The Ohio State University — A new narrow 3-atom loss resonance associated with an Efimov trimer crossing the 3-atom threshold has recently been discovered in a many-body system of ultracold Li-6 atoms in the three lowest hyperfine spin states at a magnetic field near 895 G. O'Hara and coworkers have used measurements of the 3-body recombination rate in this region to determine the complex 3-body parameter associated with Efimov physics. Using this parameter as the input, we calculate the universal predictions for the spectrum of Efimov states and for the 3-body recombination rate in the universal region above 600 G where all three scattering lengths are large. We predict an atom-dimer loss resonance at (672 +/- 2) G associated with an Efimov trimer disappearing through an atom-dimer threshold. We also predict an interference minimum in the 3-body recombination rate at (759 +/- 1) G where the 3-spin mixture may be sufficiently stable to allow experimental study of the many-body system.

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