

Abstract Submitted
for the DAMOP16 Meeting of
The American Physical Society

An effective field theory analysis of Efimov features in heteronuclear mixture of ultracold atomic gases¹ BIJAYA ACHARYA, Univ of Tennessee, Knoxville, CHEN JI, ECT*, LUCAS PLATTER, Univ of Tennessee, Knoxville — Recent experimental studies have unveiled Efimov physics in ultracold atomic gases of heteronuclear mixtures. The recombination features of such atomic systems display universal correlations including discrete scaling invariance. We use Effective Field Theory (EFT) to study the Efimov features of the heteronuclear three-atom systems consisting of two identical bosons which interact with each other through a natural scattering length and with the third particle through a large scattering length. We compute the corrections to the universal correlations by perturbative insertions of the interspecies effective range and the intraspecies scattering length. Such an analysis is relevant for mixtures of ultracold atomic gases near the interspecies Feshbach resonance.

¹Supported by the US Department of Energy under Contract No. DE-AC05-00OR22725 and the National Science Foundation under Grant No. PHY-1516077

Bijaya Acharya
Univ of Tennessee, Knoxville

Date submitted: 29 Jan 2016

Electronic form version 1.4