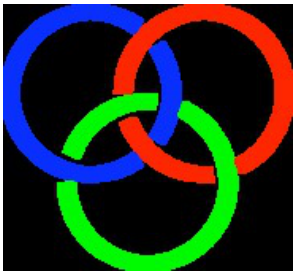

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The Persistence of Attraction: the Dipolar Efimov Effect

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In the past few years experimental and theoretical advances in the understanding of few-body physics in ultracold quantum gases with tunable interactions have lead to the confirmation of one of the most fundamental quantum phenomena involving just a few particles: The Efimov effect. In our recent work, we have extended our adiabatic hyperspherical representation to incorporate the effects of dipolar interaction, an important ingredient for studing few-body physics in ultracold dipolar gases. Even though a long-range anisotropic dipolar interaction has all the ingredients to "destroy" the Efimov effect, our work shows that not only does the effective attractive interaction that characterizes the Efimov effect persist, but also that the dipolar interaction is extremely beneficial for the study of the Efimov effect. We find dipolar Efimov states to be universal in the sense that the system has a universal three-body parameter. Consequently, energies of Efimov states in dipolar systems have a well-defined value and depend only on two-dipole physics. These states tend to be long-lived, making dipolar gases ideal candidates for studing Efimov states. In this talk, I will emphasize the importance of these findings and connect them to the theoretical extension of other few-body dipolar systems.

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