The Limits of Long-Range Thinking

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By now it is well known in the ultracold molecule community that many interesting phenomena can be understood by considering long-range interactions, that is, forces between the molecules when they are separated by, say, more than hundreds of Bohr radii. But as the field evolves and new capabilities and data appear, one must account for molecules truly encountering one another at close range. In this talk I will discuss a few recent examples where the line from long-range to short-range physics is explicitly crossed, and begin to panic about what to do then.