

Abstract Submitted
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Dipolar collisions of ultracold $^{23}\text{Na}^{87}\text{Rb}$ molecules.¹ MINGYANG GUO, XIN YE, JUNYU HE, Chinese Univ of Hong Kong, GOULVEN QUMNER, MAYKEL GONZLEZ-MARTNEZ, OLIVIER DULIEU, Laboratoire Aim Cotton, CNRS, DAJUN WANG, Chinese Univ of Hong Kong — Although ultracold polar molecules have long been proposed as a primary candidate for investigating dipolar many body physics, many of their basic properties, like their collisions in external electric fields, are still largely unknown. In fact, despite the successful production of several new ultracold molecular species in the last two years, so far the only available dipolar collision data is still from JILA's fermionic $^{40}\text{K}^{87}\text{Rb}$ experiment in 2010. In this talk, we will describe our investigation on dipolar collisions of ultracold bosonic and chemically stable $^{23}\text{Na}^{87}\text{Rb}$ molecules which possess a large permanent electric dipole moment. With a moderate electric field, an effective dipole moment large enough to strongly couple higher partial waves into the collisions can be achieved. We will report the influence of this effect on the molecular collisions observed in our experiment. Our theoretical model for understanding these observations will also be presented.

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