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Collisional studies of ultracold ^{23}Na^{87}Rb molecules[1] XIN YE, MINGYANG GUO, JUNYU HE, Chinese Univ of Hong Kong, MAYKEL GONZALEZ-MARTINEZ, ROMAIN VEXIAU, GOULVEN QUEMENER, Laboratoire Aime Cotton, CNRS, DAJUN WANG, Chinese Univ of Hong Kong — We report a series of experiments on collisions of ultracold bosonic ^{23}Na^{87}Rb molecules in their quantum ground states. First, we studied the collisions of molecular samples with distinct chemical reactivities by making use of the vibrational excitation. We observed very similar loss and heating, regardless of the chemical reactivities. Second, we studied the dipolar collision with induced dipole moments as large as 0.7 Debye. We observed a step-wise enhancement of losses as manifestations of couplings between different partial waves induced by the increasingly stronger dipolar interactions. Our experimental data show nice agreements with the model based on two-molecule complex formation.

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