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Dipolar effects in collisions of magnetic ultracold molecules GOULVEN QUÉMÉNER, MAXENCE LEPERS, OLIVIER DULIEU, CNRS, Laboratoire Aimé Cotton (France), MICHAEL MARK, ALBERT FRISCH, KIY-OTAKA AIKAWA, SIMON BAIER, FRANCESCA FERLAINO, University of Innsbruck (Austria) — Formation of Er₂ Feshbach molecules has been recently achieved in Innsbruck from magneto-associated ultracold Er atoms. Such molecules can have strong magnetic dipole moments (up to 14 μ_B) and long-range dipole-dipole effects can be observed in the ultracold regime. Using a time-independent quantum formalism, we compute the Er₂ + Er₂ loss rate coefficient as a function of a tilt angle of an applied magnetic field with respect to the axis of a pancake-shaped two-dimensional confinement. We will present the loss rate coefficient for two different configurations of magnetic fields, one corresponding to a head-to-tail collision and the other corresponding to a side-by-side collision, and compare with recent experimental results for different magnetic dipole moments.

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