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CTMC Calculations of Double Ionization of Oriented D₂ by **1MeV/u F**⁸⁺ **projectiles** K. CORNELIUS, Ouachita Baptist University, A.L. LANDERS, Auburn University — We have used a Classical Trajectory Monte Carlo calculation to explore the orientation dependence of double ionization by 1MeV/u F^{8+} ions. Previous measurements¹ of this system show a strong double ionization preference for deuterium molecules oriented perpendicular to the ion beam. The authors of [1] used a simple quantum mechanical model to qualitatively explain this behavior. In this classical calculation, we find the exact opposite result: the double-ionization probability is much stronger for molecules oriented along the beam axis. What is particularly striking is the magnitude of the discrepancy between the classical calculation and the experimental result, indicating a strongly quantum mechanical effect. ¹A. L. Landers, *et al.* Phys. Rev. A **70**, 042702 (2004).

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