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Ultracold collisional properties of weakly-bound p-wave molecules in a gas of spin-polarized fermions JOSE P. D'INCAO, JILA, University of Colorado, Boulder, CHRIS H. GREENE, Department of Physics and JILA, University of Colorado, Boulder — Abstract: We study three-atom collisional physics relevant to spin-polarized fermionic molecules, under conditions where the interatomic interactions are strongly modified by the presence of a Feshbach resonance [1]. We have explored how both the size and binding energy of p-wave molecules modify their collisional properties. We also have studied the effects of a non-negligible energy dependence, and of the finite atom-atom p-wave scattering length, on the s-wave elastic atom-dimer scattering length. We then speculate about the relevance of these results to ultracold spin-polarized fermi gas experiments. [1] H. Suno, B. D. Esry, and C. H. Greene, Phys. Rev. Lett. 90, 053202 (2003). This work was supported in part by the National Science Foundation.

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