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Probing inter-atomic correlations using excitation to high Rydberg states¹ JOVICA STANOJEVIC, ROBIN CÔTÉ, Department of Physics, University of Connecticut, Storrs — We study potential surfaces of a Rydberg atom interacting with several ground-state atoms of the same or different species than the Rydberg atom. The energy of the Rydberg atom depends measurably on the positions of the ground-state atoms and the Rydberg state. It has been demonstrated recently that these potentials support molecular bound states. Our goal is to utilize these potential surfaces for various $n\ell$ states as means to probe correlations between ground-state atoms.

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