Long-range interaction between ground and excited state hydrogen atoms[1] DANIEL VRINCEANU, ALEX DALGARNO, ITAMP Harvard-Smithsonian CfA — The asymptotic expansion at large distances is obtained for the interaction between a ground state hydrogen atom and an excited hydrogen atom with principal quantum number $n = 2, \ldots, 10$. A degenerate perturbation theory up to the second order is employed to obtain accurate results. The asymptotic representation for several special cases is found in the limit of large quantum number n.

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