

Abstract Submitted
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Laser Induced Forces Between Metallic Nanospheres; The Role of Collective Plasmon Resonances¹ PING CHU, DOUGLAS MILLS, University of California, Irvine — We explore the theory of laser induced attractive forces between conducting nanospheres. Emphasis is placed on the influence of collective mode resonances on this force. As two spheres approach each other, the dipole active plasmon resonances drop in frequency and can pass through the laser frequency. This produces a dramatic enhancement of the force. We present explicit calculation for Ag nanospheres in solution. We compare the amplitude of the laser induced attractive force with the van der Waals force.

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