Abstract Submitted
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Plasmon hybridization in nanoparticles near metallic surfaces PETER NORDLANDER, Rice University, EMIL PRODAN, University of California, Santa Barbara — We apply the recently developed plasmon hybridization method to a solid nanosphere interacting with a metallic surface[1]. We show that the plasmon energies of the nanoparticle exhibit strong shifts with nanoparticle-surface separation. Depending on the energy of the surface plasmon, nanoparticle plasmons can either redshift or blueshift with decreasing nanoparticle- surface separation. The shifts can be explained as resulting from image-like interactions with the metal surface and, more importantly, through hybridization between the nanoparticle plasmons and the delocalized surface plasmons of the substrate. [1] P. Nordlander and E. Prodan, Nano Lett. 4(2004)2209

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