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Dipole model for Non linear response of adsorbed overlayers¹ R. A. VAZQUEZ-NAVA, N. ARZATE, Centro de Investigaciones en Optica, J. E. MEJIA, Centro Universitario de los Lagos, U de G. Mexico., W. L. MOCHAN, Instituto de Ciencias Fisicas, UNAM, Mexico — We present theoretical calculations of second harmonic generation (SHG) from overlayers of alkali atoms adsorbed on a crystalline metallic surface. We assume that the overlayer is formed by an ordered two-dimensional (2D) array of adatoms that respond to the local electric field like point-like harmonic oscillators. We consider overlayers with several rational coverages, assuming that the adsorbates occupy high symmetry sites which form a Bravais lattice that is commensurate with the substrate [1,2]. SHG spectra are obtained for the five 2D Bravais lattices. We found that SHG can be used to observe ordered phases when the ordered phase has a rectangular, centered-rectangular or oblique symmetry. [1] H. Arce, W. L. Mochan and G. Cocho, Surf. Sci. 294, 108 (1993). [2] H. Arce and W. L. Mochan, J. Phys.: Condens. Matter 5, A 101 (1993).

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