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Giant Gap Surface Charge Density Waves in $NaMo_6O_{17}$ and KMo_6O_{17}[1] FENG WANG, S.-K. MO, J. W. ALLEN, U. of Michigan, G.-H. GWEON, UC- Santa Cruz, J. MARCUS, C. SCHLENKER, CNRS, H. HÖCHST, SRC, U. of Wisc. — Quasi-2-dimensional molybdenum bronzes $NaMo_6O_{17}$ and KMo_6O_{17} have a phase transition into the charge density wave (CDW) state at temperatures (T's) of 80K and 120K respectively. Our recent angle resolved photoemission spectroscopy (ARPES) data confirm in detail our previous findings [1] of nearly identical electronic structures and well nested Fermi surfaces of these two materials. An important new finding in both $NaMo_6O_{17}$ and KMo_6O_{17} is the opening of giant energy gaps greater than 0.1 eV *at T's well above the bulk CDW transitions, even as high as 300K*. The spectra are very dependent on the sample surface and measurement position, and are strongly time dependent. All the evidence indicates formation of a strongly enhanced *surface* CDW, in contrast to the interpretation of a recent publication [2] relating these large ARPES gaps to the bulk CDW. We will discuss possible scenarios, e. g. [3], for such surface effects and the implications for measuring the spectral manifestations of the true bulk CDW's. [1] G.-H. Gweon *et al.*, Phys. Rev. B **55**, 13353 (1997). [2] P.-A. Glans *et al.*, Phys. Rev. B **72**, 035115 (2005). [3] S. E. Brown *et al.*, Phys. Rev. B **71**, 224512 (2005).

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