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Fermi surface of graphene on Ru(0001) THOMAS BRUGGER, HUGO DIL, JÜRG OSTERWALDER, THOMAS GREBER, Physik-Institut, Universitaet Zuerich, Winterthurerstrasse 190, CH-8057 Zuerich, Switzerland, BIN WANG, MARIE-LAURE BOCQUET, Universite de Lyon, Laboratoire de Chimie, Ecole Normale Superieure de Lyon, CNRS, France, SEBASTIAN GÜNTHER, JOOST WINTTERLIN, Department Chemie, Ludwig-Maximilian Universitaet, Butenandtstrasse 5-13, D-81377 Muenchen, Germany — The structure of a single layer graphene on Ru(0001) is compared with that of a single layer hexagonal boron nitride nanomesh on Ru(0001). Both are corrugated sp^2 hybridized networks and display a π-band gap at the $\overline{\mathrm{K}}$ point of their 1×1 Brillouin zone. In contrast to h-BN/Ru(0001), g/Ru(0001) has a distinct Fermi surface which indicates that 0.1 electrons per 1×1 unit cell are transferred from the Ru substrate to the graphene. Photoemission from adsorbed xenon on g/Ru(0001) identifies two distinct Xe $5p_{1/2}$ lines, separated by 240 meV, which reveals a corrugated electrostatic potential energy surface like on h-BN/Rh(111) [1]. These two Xe species are related to the topography of the template and have different desorption energies.

[1] H. Dil, J. Lobo-Checa, R. Laskowski, P. Blaha, S. Berner, J. Osterwalder, and T.Greber, Science **319**, 1824 (2008).

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