Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Effects of spatial averaging on the ARPES spectra of graphene FREDERIC JOUCKEN, NICOLAS RECKINGER, University of Namur, JOSE AVILA, MARIA CARMEN ASENSIO, Soleil Synchrotron, JÉRÔME LAGOUTE, Université Paris 7 - Paris Diderot, JEAN-FRANÇOIS COLOMER, JACQUES GHIJSEN, ROBERT SPORKEN, University of Namur, PHYSICS DEPARTMENT, UNIVERSITY OF NAMUR COLLABORATION, ANTARES BEAMLINE, SOLEIL SYNCHROTRON COLLABORATION, STM LAB, MPQ, UNIVERSITÉ PARIS 7 - PARIS DIDEROT COLLABORATION — We report on an ARPES nanoscope investigation (nano-ARPES) and demonstrate that spatial averaging of ARPES data, even on a single graphene domain, lead to apparent kinks in the dispersion relation as well as variations of the MDC widths with binding energy that do not appear in the spectra acquired on a very small spot (below 100nm X 100nm). At the same time, we show that the electronic dispersion relation of our graphene sample is perfectly linear while the MDC widths do not display a simple dependence with the binding energy.

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Date submitted: 27 Nov 2014 Electronic form version 1.4