Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Friedel oscillations of the superconducting gap in FeSe T. HANAGURI, RIKEN CEMS, T. WATASHIGE, Dept. Phys., Kyoto Univ., Y. KOHSAKA, K. IWAYA, T. MACHIDA, RIKEN CEMS, T. SHIBAUCHI, Dept. Adv. Mat. Sci., Univ. Tokyo, R. KOBAYASHI, S. KASAHARA, Y. MATSUDA, Dept. Phys., Kyoto Univ., A. BÖHMER, T. WOLF, C. MEINGAST, H. V. LÖHNEYSEN, IFP, Karlsruher Institut für Technologie — The spatial variation of the superconducting gap of FeSe has been studied by spectroscopic-imaging scanning tunneling microscopy. The apparent gap amplitude defined by the energy separation between the quasi-particle coherence peaks exhibits spatial periodic oscillations. We found that the wavelength of the oscillations agrees with the wavelength of the normal-state quasi-particle interference pattern at the Fermi energy. Such Friedel oscillations of the superconducting gap may be related to the extremely small Fermi surfaces of FeSe in the BCS-BEC crossover [1]. [1] S. Kasahara *et al.*, PNAS Early Edition, Nov. 6, 2014, doi:10.1073/pnas.1413477111

Tetsuo Hanaguri
RIKEN CEMS

Date submitted: 13 Nov 2014 Electronic form version 1.4