Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

**Possibility of nodal $s^{\pm}$ pairing symmetry in plutonium-based 115 superconductors**[1] MATTHIAS J. GRAF, TANMOY DAS, JIAN-XIN ZHU, Los Alamos National Laboratory — We performed RPA calculations to investigate the role of spin-fluctuations in the superconducting state of Pu-115 compounds. First-principles electronic structure calculations were used as input, combined with the spin-fluctuation exchange approximation, to compute within the RPA method the nesting conditions on the Fermi surface. Of special interest for superconductivity are hot spots caused by nesting near the wave vectors $(\pi, \pi, q_z)$ connecting the four Fermi surfaces. Surprisingly, in this multiband material the normal-state instability toward superconductivity is dominated by a nodal gap with $s^{\pm}$ symmetry over a more typical $d_{x^2-y^2}$-wave gap. We will discuss the possibility of magnetic resonances in the superconducting state and how to differentiate between these closely competing pairing symmetries in inelastic neutron scattering and point-contact spectroscopy.

[1]We acknowledge computing allocations by NERSC under Contract No. DE-AC02-05CH11231.

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Date submitted: 15 Nov 2013 Electronic form version 1.4