

Abstract Submitted  
for the MAR16 Meeting of  
The American Physical Society

**Superconducting pairing in resonant inelastic X-ray scattering**

YIFEI SHI, University of Virginia, DAVID BENJAMIN, EUGENE DEMLER, Harvard University, ISRAEL KLICH, University of Virginia — We develop a method to study the effect of the superconducting transition on resonant inelastic X-ray scattering (RIXS) signal in superconductors with an order parameter with an arbitrary symmetry within a quasiparticle approach. As an example, we compare the direct RIXS signal below and above the superconducting transition for  $p$ -wave type order parameters. For a  $p$ -wave order parameter with a nodal line, we show that, counterintuitively, the effect of the gap is most noticeable for momentum transfers in the nodal direction. This phenomenon may be naturally explained as a type of nesting effect.

Yifei Shi  
University of Virginia

Date submitted: 06 Nov 2015

Electronic form version 1.4