

Abstract Submitted  
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**Anomalous behavior**  
**of the nodal scattering rate of  $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+\delta}$  near the Fermi energy**  
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AIURA, HIROSHI EISAKI, HIDEKI IWASAWA, AIST, MICHAEL HERMELE,  
DANIEL DESSAU, University of Colorado — The scattering rate as determined  
by the width of a band is a direct measure of the imaginary part of a particle's  
self-energy. Though the dispersion of a band can also be used to extract the particle's  
self energy, the scattering rate is superior, because the ambiguity due to determin-  
ing the underlying bare band is not included. The excellent momentum and energy  
resolution of low photon energy ARPES allows us to study the scattering rate of  
 $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+\delta}$  near the Fermi energy. Our studies show an anomalous feature  
that warrants continued study.

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