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## **【631】 Spin-orbit coupling and self energies in $\text{Sr}_2\text{RuO}_4$**

*Wednesday 28 August 2019 17:00 (30 minutes)*

We explore the interplay of electron-electron correlations and spin-orbit coupling in the model Fermi liquid  $\text{Sr}_2\text{RuO}_4$  using laser-based angle-resolved photoemission spectroscopy. Our precise measurement of the Fermi surface confirms the importance of spin-orbit coupling and reveals that its effective value is enhanced by a factor of about two, due to electronic correlations. The self-energies for the  $\beta$  and  $\gamma$  sheets are found to display significant angular dependence, which arises from a substantial orbital mixing induced by spin-orbit coupling and does not imply momentum dependent many-body interactions. A comparison to single-site dynamical mean-field theory further supports the notion of dominantly local orbital self-energies, and provides strong evidence for an electronic origin of 'kinks' in the quasiparticle dispersion of  $\text{Sr}_2\text{RuO}_4$ .

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