Resonant x-ray scattering experiments have been performed on a high-quality single crystal of URu2Si2, cut with a [101] direction specular. Data have been collected at the uranium M4 absorption edge below the hidden-order transition temperature, TH = 17.5 K, exploring the region of the reciprocal space plane [H0L] with 1 < H < 1.85 and 1.8 < L < 2.1.Within the sensitivity of our measurements, the results obtained exclude electric quadrupoles of any symmetry as a hidden-order parameter with a propagation vector in the explored region.
The results have been published by H. C. Walker et al., PHYSICAL REVIEW B 83, 193102 (2011).

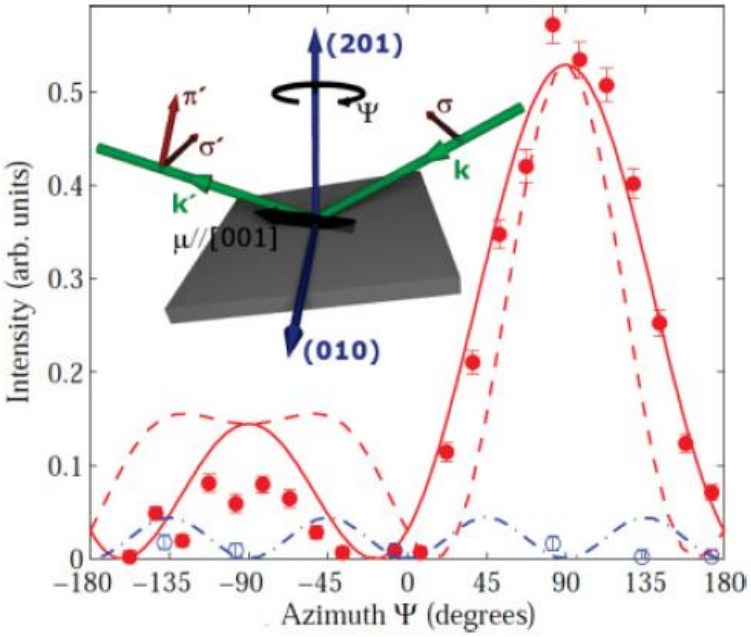

FIG. 1. Azimuthal dependence of the (201) reflection with *azimuth* ψ = 0 corresponding to the [010] axis being parallel to the incident beam. Solid (red) circles correspond to the intensities in the σ-π channel, and the full (red) line to the theoretical intensity variation for magnetic dipoles ordered along [001], normalized at the maximum intensity. The dashed red line is the σ-π intensity dependence expected for Q_{xy} quadrupole order. Open (blue) circles correspond to the intensities measured in the σ-σ channel, and the dashed-dotted blue line is the σ-σ intensity dependence expected for Q_{xy} quadrupole ordering. There would be zero intensity in σ-σ for the magnetic dipole ordering. The inset shows schematically the scattering geometry, with symbols defined in the text.