



Contribution ID: 83

Type: **Poster**

## **REXS experimental stations at beamline P09 at PETRA III at DESY**

*Tuesday, 7 October 2025 17:40 (1h 30m)*

At PETRA III at DESY, at beamline P09, two experimental stations are dedicated to resonant X-ray diffraction (REXS), each one equipped with different diffractometers to accommodate either light- or heavy-weight sample environments. Low temperature experiments can be performed in combination with either magnetic fields up to 14 T or high pressure until 20 GPa allowing it to investigate a diversity of long range ordered phases in strongly correlated and magnetic materials. State-of-the-art polarization control and analysis are available in a wide range of energy from 3.0 to 13.5 keV, for which dedicated data analysis pipelines are available for fast analysis of the Stokes parameters, allowing it either to disentangle between different order parameters or eventually perform full magnetic structure determinations. Hereby, I will present an update of the REXS capabilities at beamline P09 at PETRA III and some related recent highlights.

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**Session Classification:** Poster session Tuesday