Contribution ID: **128** Type: **Contributed poster**

A 1D imaging soft X-ray spectrometer for the SQS scientific instrument at the European XFEL

Monday, 25 June 2018 18:45 (15 minutes)

A novel type of grazing incidence soft X-ray spectrometer is being constructed for the SQS (Small Quantum Systems) scientific instrument at the European XFEL. It uses a cylindrical constant-line-spacing grating in Rowland mount for dispersion of the X-rays in the vertical direction. A Wolter mirror pair images the source on the detector in horizontal direction. This arrangement facilitates a detailed investigation of processes occurring when an intense FEL pulse proceeds through a medium, and it allows for high time resolution in pump-probe experiments. The detector is based on a microchannel plate with a multi-delay-line anode, allowing for single-shot multi-hit detection. Details of the spectrometer and the status of the project will be presented.

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Session Classification: Poster session