

# PUNC: PANDA Upgrade Primary Spectrometer (Neutron Channel)

*Thursday, 27 April 2023 10:45 (30 minutes)*

PANDA is a world-leading cold three-axis spectrometer complementing TOF instruments in case of specific requests for resolution and related signal-to-noise ratio or demanding sample environments. Providing experiments with highest reliability since 2005, PANDA is always requested for newest scientific aspects in strongly correlated electron systems and on quantum magnetism, but serves for studies on phonons and their interaction with electronic degrees of freedom, too. PANDA improved on its secondary side (BAMBUS multi-channel-system) and due to providing a virtual twin as well as AI-assisted mapping mode for better performance already, but keeps limited by its primary flux. Improving this and concurrently the signal-to-noise ratio will allow more and better experiments but could also answer the increasing demand for high-end experiments. We suggest building a new neutron channel (beam port to drum) now with

- i) installation of a velocity selector,
- ii) flux increase by state-of-the-art neutron-optical opportunities and
- iii) shielding designed for giving frequent access to the VS and filter-collimation devices.

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