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Status of the Time-of-Flight Direct-Geometry Spectrometer 4SEASONS

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4SEASONS, also called SIKI, is a time-of-flight direct geometry spectrometer in the Materials and Life Science Experimental Facility (MLF) at the Japan Proton Accelerator Research Complex (J-PARC). It is designed for measurements of dynamics in the 10^0 - 10^2 meV energy range [1]. The momentum-energy region for this spectrometer occupies the middle of the momentum-energy space covered by all MLF neutron spectrometers [2]. Although the instrument has been conducting user programs for about 10 years, the upgrade of the instrument is continuously progressed. Examples of the recent upgrades are: Replacement of the most end part of the neutron guide tube, increase in the number of detectors, update to use a superconducting magnet, and replacement of the T0 chopper. In the presentation, we will show the specifications of the instrument, usage statistics, and recent examples of scientific outputs and instrument upgrades.

References

- [1] R. Kajimoto et al., J. Phys. Soc. Jpn. **80**, SB025 (2011).
- [2] H. Seto et al., BBA Gen. Subj. **1861**, 3651 (2017); R. Kajimoto et al., Physica B **562**, 148 (2019).

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