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【715】Development of a fast high-efficiency neutron detector using Lithium-6 doped glass and Silicon photomultipliers (SiPM)

The Fundamental Neutron and Precision Physics group at the University of Bern is currently developing a scintillator-based neutron detector using Lithium-6 doped glass with a pixel size of 1 x 1 cm2. Fast silicon photomultipliers (SiPM) are utilized to detect the corresponding light pulses. First characterization measurements with a prototype detector system performed at the BOA beamline at the Swiss Spallation Neutron Source SINQ at the Paul Scherrer Institute (Switzerland) showed rate capabilities of up to a few MHz and detection efficiencies close to 100%. The results are encouraging and would provide the means for direct beam measurements, for instance, in neutron particle physics or scattering experiments.

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