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SoLid: a new short baseline neutrino experiment

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The SoLid neutrino detector concept is currently one of the most compact and most finely segmented neutrino detectors.

Its use is most effective near compact and intense neutrino sources, such as the Belgian high-power BR2 research reactor, where it will operate from 2016 onwards to search for sterile neutrinos. In this talk we will review the design, the operation characteristics, and the performance of a 300 kg full-size detector module that was deployed and operated at 5m distance from the BR2 reactor core in 2015. The plan is to improve upon the current design and gradually extend the sensitive mass in order to complete a 1.5 tonne detector later in the year. The sensitivity of SoLid is sufficient to exclude a significant part of the sterile neutrino parameter space by 2018.

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