

# The XENONnT Neutron Veto: performances without and with Gd-doping.

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The Neutron Veto of the XENONnT experiment is a Gd-loaded water Cherenkov detector designed to tag the radiogenic neutrons from the detector materials, in order to reduce the most important Nuclear Recoil backgrounds for the WIMP search in the XENONnT TPC.

The Neutron Veto is instrumented with 120 (8" Hamamatsu R5912) photomultiplier tubes, featuring high-QE and low-radioactivity, installed inside a high light-collection region delimited by ePTFE reflector panels around the cryostat.

In this talk, we describe the Neutron Veto performances in the first XENONnT Science Run, where the Veto has been operated with demineralized water.

We also present the recent operations of Gd-doping of water, and the resulting improved performances.

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