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Development of Ge bolometers using NbSi transition edge sensors for the EDELWEISS and RICOCHET projects

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Very low threshold massive bolometers are key devices for light dark matter search and coherent elastic neutrino-nucleus scattering physics. In this paper we describe recent development on Germanium bolometers equipped with NbSi transition edge sensors. These sensors exhibit a transient out-of-equilibrium phonon signal that improves detector sensitivity. Optimization of the bolometer design to maximize signal to noise ratio is illustrated in detail. Application to the EDELWEISS dark matter and RICOCHET neutrino projects is discussed.

Student (Ph.D., M.Sc. or B.Sc.)

N

Less than 5 years of experience since completion of Ph.D

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