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Transition-edge sensors based on superconducting nanowires. MATTHEW BELL, ANDREI SERGEEV, University at Buffalo, GREGORY GOLTSMAN, Moscow State Pedagogical University, JONATHAN BIRD, ALEKSANDR VEREVKIN, University at Buffalo — We present our experimental study of superconducting NbN nanowire-based sensor. The responsivity of the sensor is strongly affected by the superconducting transition width of the nanostructure, which, in turn, is determined by the phase slip centers (PCSs) dynamics. The fluctuations and noise properties of the sensor are also discussed, as well as the devices' behavior at high magnetic fields. The ultimate performance of the sensor and prospects of the devices will be discussed, as well.

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