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G.P.Pepe - Physics and Applications of Superconducting Nanowire Single-Photon Detectors

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Superconducting Nanowire Single-Photon Detectors (SNSPD) are very interesting for their overall performances in terms of system quantum detection efficiency, high maximum counting speeds achieved at wavelengths up to near-IR, ultra low darkcounts and very short jitter times. In this lesson we'll present the operation principle of SNSPDs, the fabrication processes and the various approaches followed for both optical coupling and electronic read-out. The use of SNSPDs in some quantum applications will be also presented and discussed.