Abstracts

Low noise direct detector at submillimeter wavelength using SIS junction [Nb/AlO/sub x//Nb]

A. Karpov, J. Blondel, M. Voss and K.H. Gundlach. "Low noise direct detector at submillimeter wavelength using SIS junction [Nb/AlO/sub x//Nb]." 1997 MTT-S International Microwave Symposium Digest 2. (1997 Vol. II [MWSYM]): 919-920.

We have demonstrated the feasibility of a broad band SIS direct detector with a bandwidth up to 70 GHz around 330 GHz. The SIS detector responsivity approaches the quantum limit. The optical noise of 13 mK/spl radic/s measured with the new direct detector receiver is close to the noise of bolometer receiver developed for radioastronomy at the same wavelength. The SIS direct detector works at 4.5 K instead of 0.1-0.3 K required for bolometer receiver.

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