Contribution ID : **62** Type : **not specified**

D. Salvoni - Double dark counts rates in NbTiN SNSPD

mercoledì 18 settembre 2019 19:00 (20)

In this work we present a study on the dark counts rate in a NbTiN Superconducting Nanowire Single Photon Detectros (SNSPD). The strip is 80nm wide, hence we are in the 2D regime. We measure the distribution of the time intervals elapsed between two consecutive dark pulses at 4,2K and we do not observe a simple Poisson distribution as expected but a combination of two Poisson-like processes, occurring with two dierent rates. The two measured dark counts rate exhibit a dierent dependence on the bias current: one process dominates at lower bias and the other bocomes more prominent as the current increases. In the scenario presented by Ejrnaes et al. [1], this result could conrm that, in this temperature regime, dark counts are generated mainly by multiple consecutive uctuation events. The result can also be a footprint of two dierent process occurring in the nanostrip.

References [1] Ejrnaes M, Salvoni D, Parlato L, Massarotti D, Caruso R, Tafuri F, Yang X Y, You L X, Wang Z, Pepe G P and Cristiano R 2019 Scientific Reports 9 8053