

The Effect of High Background and Dead Time of an InGaAs/InP Single-photon Avalanche Photodiode on the Registration of Microsecond Range Near-infrared Luminescence*

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Received January 27, 2020

Revised January 27, 2020

Accepted February 06, 2020

The effects of a high background count and a microsecond dead time interval on a gated InGaAs/InP single-photon avalanche photodiode (SPAD) during microsecond luminescence decay registration are discussed. It is shown that the background count rate of the SPAD limits its use for time-resolved and steady-spectral measurements, and that a „pile-up“ effect appears in the microsecond range.

Keywords: near-infrared detector; photon counting; single-photon avalanche diode (SPAD), pile-up, counting loss.

* Полный текст статьи опубликован в „Optics and Spectroscopy“
V. 128 N 5 2020.