Contribution ID : **162** Type : **not specified**

Temperature Dependent Investigations of DCR of SiPM

Saturday, 10 October 2015 10:15 (15)

Despite several advantages of Silicon Photomultipliers (SiPM) over Photomultiplier Tubes (PMT) like the increased photon detection efficiency (PDE), the compact design and the insensitivity to magnetic fields, the dark count rate (DCR) of SiPM is still a large drawback. Especially concerning applications with the need of large photosensitive areas or applications for which cooling of the detector is not an option. Reducing the dark count rate of SiPM would lead to an enormous enhancement of the application range of this promising photo-detector. The main goal of this work is to gain initial information on dark generation and identify the dominating contributions to dark currents. The chosen approach to do so, is to extract characteristic activation energies of the contributing mechanisms from temperature dependent investigations of dark currents and DCR. In this talk, first steps towards the development of a reliable method for the analysis of dark currents and dark events are presented.

Presentation type

Section talk (10+5 min)

Primary author(s) : Mr. ENGELMANN, Eugen (Universität der Bundeswehr München)

Co-author(s) : Mr. DIETZINGER, Christoph (KETEK GmbH, Munich); Dr. POPOVA, Elena (Moscow Engineering and Physics Institute); Dr. WIEST, Florian (KETEK GmbH, Munich); Dr. ISKRA, Peter (KETEK GmbH, Munich); Dr. FOJT, Reinhard (KETEK GmbH, Munich); Mrs. LOEBNER, Sabrina (Universität der Bundeswehr München); Dr. VINOGRADOV, Sergey (Cockcroft Institute, University of Liverpool); Mr. GANKA, Thomas (KETEK GmbH, Munich); Prof. HANSCH, Walter (Universität der Bundeswehr München); Mr. GEBAUER, Wolfgang (Universität der Bundeswehr München)

Presenter(s) : Mr. ENGELMANN, Eugen (Universität der Bundeswehr München)

Session Classification : Methods of experimental physics - parallel VI

Track Classification : Methods of experimental physics