

Simulation of LGAD characteristics taking into account negative feedback in detectors with carrier multiplication

Thursday 3 December 2015 16:40 (20 minutes)

The LGAD characteristics are calculated basing on the model of carrier impact ionization in the p+ built-in layer. It is shown that characteristics of the diodes are controlled by negative feedback via trapping of holes arisen due to impact ionization, which reduces the electric field and the signal gain. The dependences of collected charge vs. bias voltage and fluence are obtained and their correlation with experimental data is shown.

Author: Dr VERBITSKAYA, Elena (Ioffe Institute, St. Petersburg)

Co-authors: SHEPELEV, Artem (Ioffe Institute, St. Petersburg); MITINA, Darya (Ioffe Institute, St. Petersburg); Dr EREMIN, Vladimir (Ioffe Institute, St. Petersburg)

Presenter: Dr VERBITSKAYA, Elena (Ioffe Institute, St. Petersburg)

Session Classification: Simulations