



Contribution ID: 142

Type: Poster

Gain stabilisation of SiPMs

The gain of SiPMs depends both on bias voltage and on temperature. For stable operations, both need to be kept constant. In an ILC calorimeter with millions of channels this is a challenging task. It is, therefore, desirable to compensate automatically for temperature variations by readjusting the bias voltage. We have designed an adaptive power supply to achieve this task. We anticipate a gain stability at the level of 1%. First, we present measurements of the gain dependence on temperature and bias voltage for several SiPMs from three different manufacturers and determine the dV/dT dependence. We then demonstrate the performance of the gain stability with a prototype that was constructed in industry after performing measurements with a test board.

Primary author: POLAK, Ivo (Acad. of Sciences of the Czech Rep. (CZ))

Co-author: EIGEN, Gerald (University of Bergen (NO))

Presenter: POLAK, Ivo (Acad. of Sciences of the Czech Rep. (CZ))

Track Classification: Sensors: 1d) Photon Detectors