

## 41st RD50 Workshop on Radiation Hard Semiconductor Devices for Very High Luminosity Colliders (Sevilla, Spain)



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### **Hadron damage investigation of FBK and HPK Low Gain Avalanche Detectors**

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The upgrade of the current Large Hadron Collider (LHC) to the High Luminosity Large Hadron Collider (HL-LHC) will increase the luminosity of the LHC by a factor of 10. Therefore, fast timing detectors with high radiation tolerance are required. Low gain avalanche detectors (LGADs) are promising candidates with timing resolutions within tens of picoseconds. Hamamatsu Photonics K.K. (HPK) and Fondazione Bruno Kessler (FBK) LGADs have been irradiated with 400 and 500 MeV protons respectively at FNAL and LANL at several fluences up to  $1.5 \times 10^{15}$ . Characterization measurements of these devices including IV, CV and timing resolution measurements have been performed as a function of the dose received.

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