

Design of a 64 channels current-to-frequency converter ASIC, front electronics for high intensity particle beam detectors.

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The development of the next generation of accelerators for charged particle radiotherapy aims to reduce dimensions and operational complexity of the machines by engineering pulsed beam accelerators. The drawback is the increased difficulty to monitor the beam flux. Within each pulse, instantaneous currents larger by two to three orders of magnitude than present applications are expected, which would lead to saturation of the readout of the monitor chambers. In this presentation, the design and the realization of a new Application Specific Integrated Circuit, suitable for the high intensity beams produced by the new accelerators are presented.