

## International Workshop on Next generation Nucleon Decay and Neutrino Detectors (NNN19)



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### Design of a SiPM Signal Conditioning System for the DUNE Photon Detection System

In this work we study the design of three stages used to read and amplify the signals coming from 48 SiPM detectors connected in parallel. In the pre amplification stage, the charge integrator circuit and the trans-amplifier circuit are proposed, in the addition stage, a simple adder circuit; and, in the final stage, a low pass Sallen Key filter. A circuit analysis of the stages was done taking into account the different noise sources, obtaining their respective transfer functions in order to simulate the behavior of system. Finally, a set of values that meets the system requirements was found and a comparison between the circuits performances of the pre amplification stage was done.

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