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FIPSER a novel low cost and high performance readout for astrophysics

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Low-cost and low-power digitization systems become increasingly important in particle-physics and particle-astrophysics experiments as the number of channels is continuously rising. Specialized readout concepts have been developed in the past that aimed at lower costs and made detector systems with many ten thousand channels feasible. As the number of channels in experiments is still on the rise new readout concepts are needed that meet upcoming demands.

We propose a novel readout system FIPSER (Fixed Pulse Shape Efficient Readout) that is primarily aimed for the digitization of detector signals that are a few nanoseconds long and vary in amplitude, but do not change their shape. FIPSER has the potential to lower the costs of the readout, including the front-end

electronics, by an order of magnitude to less than \$10 and power consumption to less than 50mW per channel. FIPSER will make new groundbreaking experiments possible that have previously not been feasible due to conflicting power, thermal, and performance requirements.

Collaboration

– not specified –

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