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Reconfigurable hardware applications on NetFPGA for network monitoring in large area sensor networks

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A valuable functionality in many distributed, very large volume sensor network applications is the requirement to characterize and analyze the data traffic at wire speed. We discuss the benefits of a reconfigurable hardware router for real-time data processing and monitoring from sensors before the transmission to the network, based on the NetFPGA platform. We report on our study of a hardware implementation to monitor web-based network applications and compare our results with a software based network analyzer. Finally, we highlight the possible cases of reconfigurable hardware routers, to augment the real-time data routing, processing and monitoring tasks for large distributed sensors network such as of a neutrino telescope.

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