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Multigigabit Wireless Data Transfer for High Energy Physics Applications

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The volume of data produced at the Large Hadron Collider (LHC) is immense and represent a considerable processing challenge. Moreover the LHC and future hadronic colliders are the most demanding environments, with respect to ultra-low latencies, ultra-high data rate, reliable indoor coverage and harsh radiation environment, in the world.
Any technology meeting the above conditions will have to satisfy the standard requirements of energy efficiency, low cost and security. Today, the data transmission in HEP experiments is based on wire and optical readout architecture. We propose the use of wireless data transmission described here as a third option. We present some selected physics cases and an overview of the status of our ASIC development and first ideas for wireless read out and control.

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