Multigigabit Wireless Transfer of Data for HEP experiments

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LoI Proposal (draft available here)

- Plenty of TDAQ experience on LHC and neutrino experiments
- Currently involved in several aspects of the Phase1,2 ATLAS TDAQ system (FELIX): pixel readout, etc.
- Interest: wireless data transfer for high-granularity detectors allows to broaden their physics reach by:
  - increasing the available readout bandwidth with more links
    - wireless links are not limited by spatial constraints and have reduced impact on the material budget
  - allowing for an efficient pre-processing the data
    - e.g: pre-estimate track pT by correlating spatial info of different layer
  - wireless technology can deliver O[Gbps] data transfer thanks to the latest progress
- Great alternative to what already available in HEP
  - R&D already started [https://arxiv.org/pdf/1511.05807.pdf]
- Limitations: power transfer over long distance, chip reliability under HEP harsh conditions, cross talks, etc.
- Prototype available at ANL

Z. Djurcic et al., Nucl.Instrum.Meth.A 785 (2015) 99-104