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## **White Rabbit based sub-nsec time synchronization, time stamping and triggering in distributed large scale astroparticle physics experiments**

*Tuesday, June 7, 2016 3:00 PM (1h 30m)*

Time-Synchronization to sub-nsec precision between detector subsystems in large scale astroparticle physics experiments can efficiently be provided by White-Rabbit (WR), a new ethernet-based technology for time and frequency transfer.

We discuss principles and advantages of WR for distributed detector arrays, which allows clock-synchronziation and trigger-time stamping at sub-nanosecond precision; as well as for complex and flexible topological trigger strategies, based on ethernet-routed timestamps.

We describe a White-Rabbit implementation at the Gamma-Ray facility HiSCORE (Siberia) for airshower reconstruction; and first experience with the next generation Zynq-based WR-ZEN platform.

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