

# KOLLOQUIUM

Informatik-Sonderkolloquium

## The communications system of the Pierre Auger Observatory in Argentina

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The Pierre Auger Observatory uses 1600 surface detectors deployed over 3000 km<sup>2</sup> in the Argentinean Pampa to measure cosmic ray air showers. The detectors are located on a regular grid with 1.5 km spacing and are supplied by a solar power system. They communicate their trigger and event information over a wireless communication system in 900 MHz ISM band to several central stations for event building and data storage.

The talk discusses the topology, the protocol and implementation issues of the communications system and compares it with a more modern implementation as wireless sensor network anticipated for next generation experiments. One of those experiments is AERA (the Auger Engineering Radio Array). Its communication system will consist of up to 180 subscriber stations, which transmit their data to a common tower using a Time Division Multiple Access (TDMA) based protocol.

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