The Trigger and Data Acquisition System for the 8 tower subsystem of the KM3NeT detector

Presenter:

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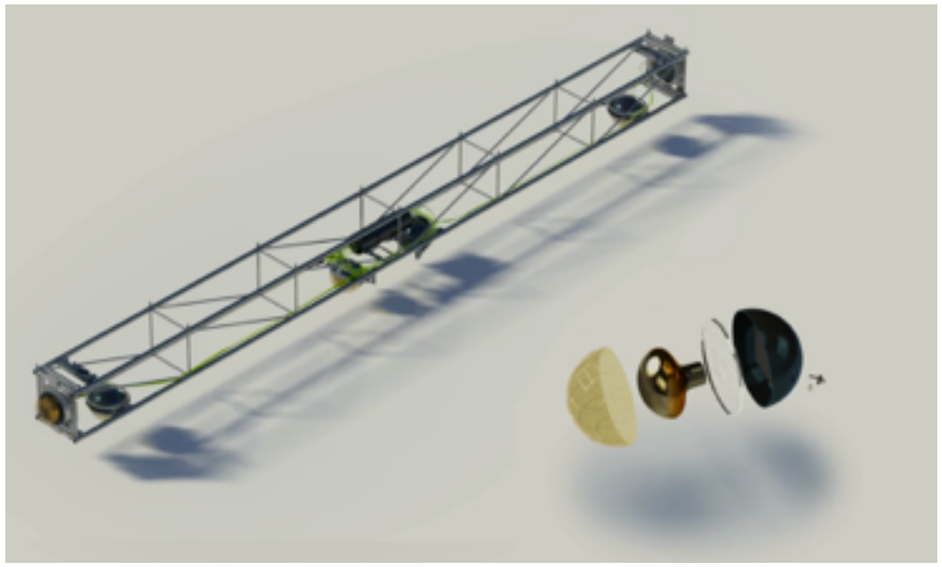
on behalf of the KM3NeT-Italy Collaboration

- KM3NeT-Italy is an INFN project supported with Italian PON fundings for carrying out the inner core of the multi- km3 size KM3NeT-ARCA neutrino telescope
- The detector will be placed in the Ionian Sea (Italy) at 3500 m of depth
- It will be made of ~700 optical modules (OMs) arranged in structures called floors containing 6 OMs each one
- Floors are vertically linked together in groups of 14 called towers of about 500 m high



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- No off-shore hardware trigger is implemented
- The throughput from sea can range up to 30 Gbps due to large optical background
- A 10Gb ethernet network is required in order to handle the high data throughput
- Data from floors are split in slices of a fixed time duration
- After a two-steps aggregation phase, data are analyzed and then the found events are finally stored
- The whole acquisition system can be controlled by a graphical user interface
- The TriDAS implementation is currently being tested with a setup realized in the KM3NeT DAQ laboratory at the INFN-Sezione di Bologna.