

# Acoustic Detection of UHE Neutrino R&D The ACoRNE project

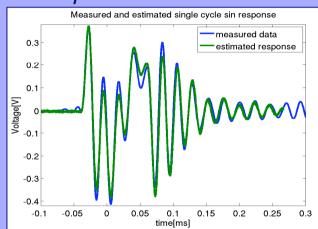
## The Rona Hydrophone Array



- ★ The QinetiQ underwater acoustic range: a hydrophone array off Rona in North-West Scotland
- → 7 hydrophones read out at 16bits, 140kHz - total of ~26Tb data taken since December 2005
- ★ Enables background studies, 'phone characterisation, calibrator deployment, etc.

#### **Acoustic Calibrator**

- → Aim
  Produce an acoustic bipolar pulse
- ✦ Hydrophone characterisation Uses equivalent circuit method



◆ Development cycle

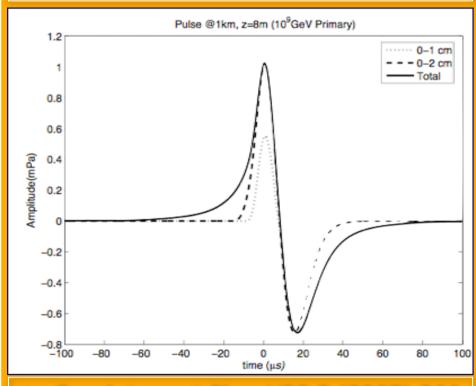




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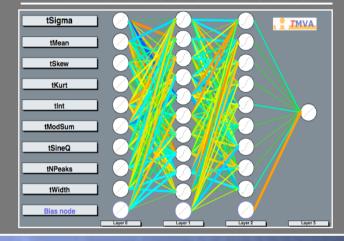
### Neutrino Pulse Simulation

- + Extension to CORSIKA UHECR code
- Comparisons with GEANT at lower energies
- Subsequent shower parametrisation permits fast UHE neutrino simulation



★ See Astropart Phys V28 3 (2007) 366

#### **Event Classification**



## **Sensitivity Calculations**

