











Experiment status

Service cruises

- Nov 2014: RV Pourquoi Pas? (Marsite)
- Apr 2015: RV Poseidon (POS484)
- Apr 2016: RV Poseidon (POS497)
- May 2017: RV Yunus
- Jan. 2018: RV Yunus
- Network status after 2.5 years (May 2017)
 - Fully operational
 - No major changes in sampling strategy
 - LGO stations
 - One station not responding to modem (2004), but still measuring
 - One station with low battery (27% power left vs 48% for the others)
 - Long-term drift for P & T sensors (SV sensors drift + random offsets)

- GEOMAR stations

- One station with low battery (22% power left vs 30% for the others)
- P & T sensors failure on two stations, long-term drift for the others



Experiment status

- Service cruises
 - Nov 2014: RV Pourquoi Pas? (Marsite)
 - Apr 2015: RV Poseidon (POS484)
 - Apr 2016: RV Poseidon (POS497)
 - May 2017: RV Yunus
 - Jan. 2018: RV Yunus
- Network status after 3.2 years (Jan. 2018)
 - LGO stations
 - Station 2004 still not responding to modem
 - Station 2002 almost out of battery (8%)
 - Recovery of stations 2002 and 2003 (2001 did not go up)
 - GEOMAR stations
 - All stations are out of battery and not responding



























Measuring fault displacement by long-term acoustic ranging

Successful approach if displacement > ~5 mm/yr

- Acoustic-ranging equipment is reliable
 - Battery life still limited to 3-4 years
 - Tripod design proved to be stable
- Beacons must be oriented on the seafloor (ROV inspection)
 - High resolution tiltmeters (oriented relative to tripods)
 - + A precision of $\pm 0.05^{\circ}$ at 3.60m height \Rightarrow ± 3 mm uncertainty
- Monitoring sound velocity is critical
 - SV sensors proved unreliable over long-term
 - Requires high resolution T, P, Salinity sensors (long-term drift issue !)
 and/or independent CTD sensor
 - Possibly current sensors (ADCP)

• Alternative approach

- Strain measurements using fiber optics (with P, T monitoring)



