AEROSITE: Autonomous Environmental and Scientific SWGO site Characterization Instrument

L. Chytka, D. Mandát, M. Pech, D. Staník, J. Vícha,
P. Trávníček, M. Boháčová, P. Tobiška, T. Bulik, M. Cieślar,
M. Suchenek for the SWGO Collaboration

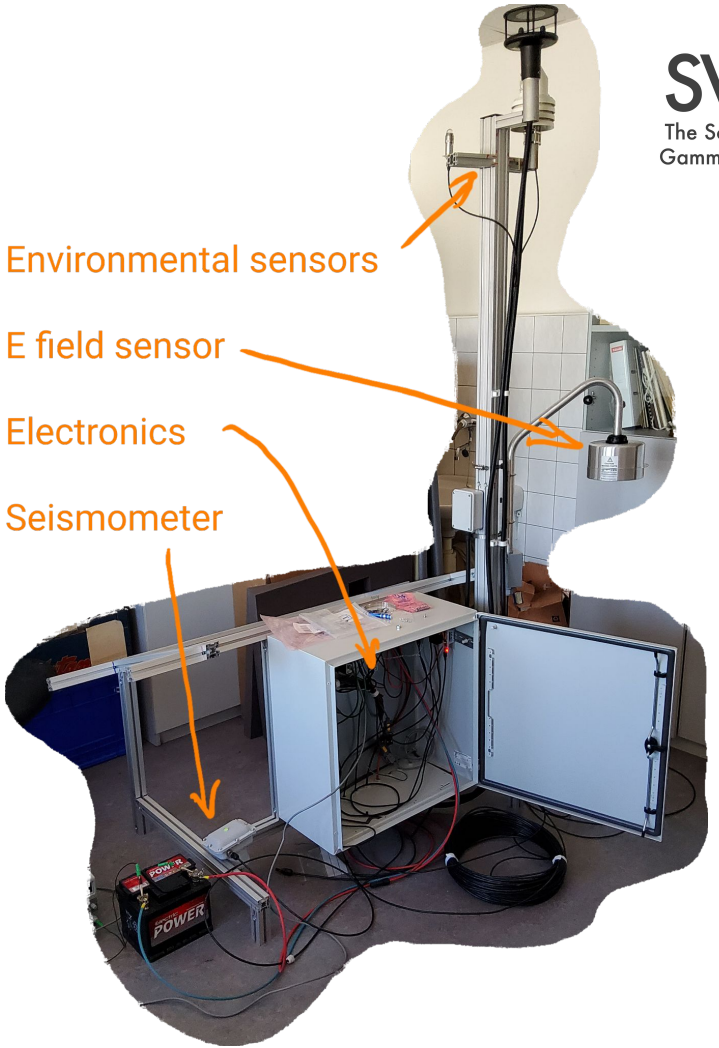
ICRC 2021, 16. 7. 2021

AEROSITE

Autonomous EnviROnmental and Scientific SWGO site characterization InsTrumEnt

Off-grid environmental monitoring on four SWGO candidate sites

Temperature, humidity, atmospheric pressure, solar irradiation, wind speed and direction, E field, seismic activity

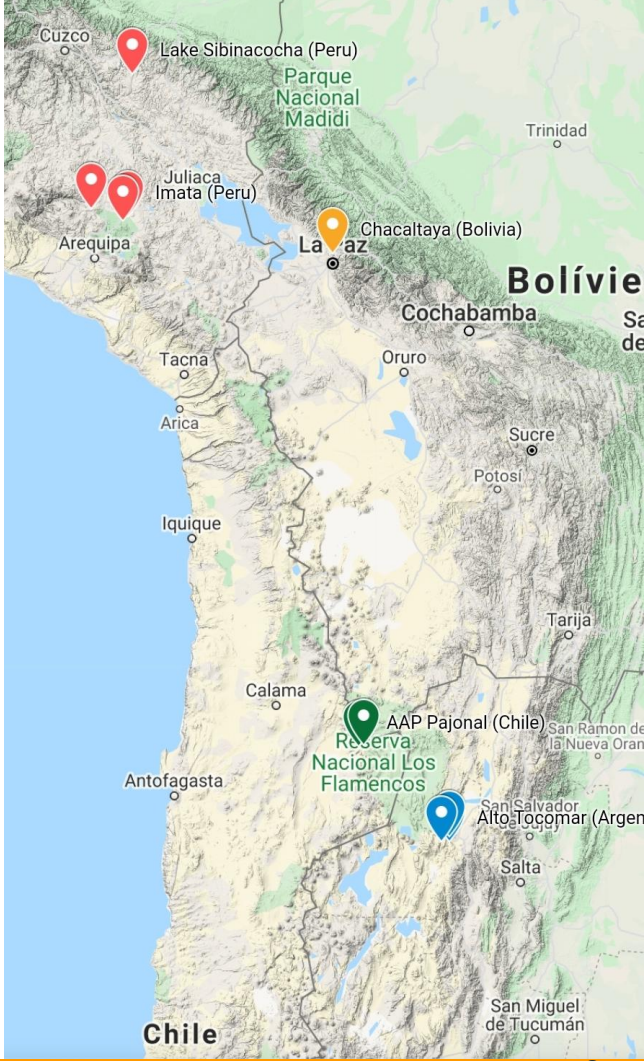


Site characterization

Candidate sites in Argentina, Bolivia, Chile and Peru →

Candidate sites environment will be evaluated based on:

- Public data – long term historical data obtained from nearby observatories, meteostations, satelites etc.
- AEROSITE data – data from cross-calibrated instruments provide reliable reference

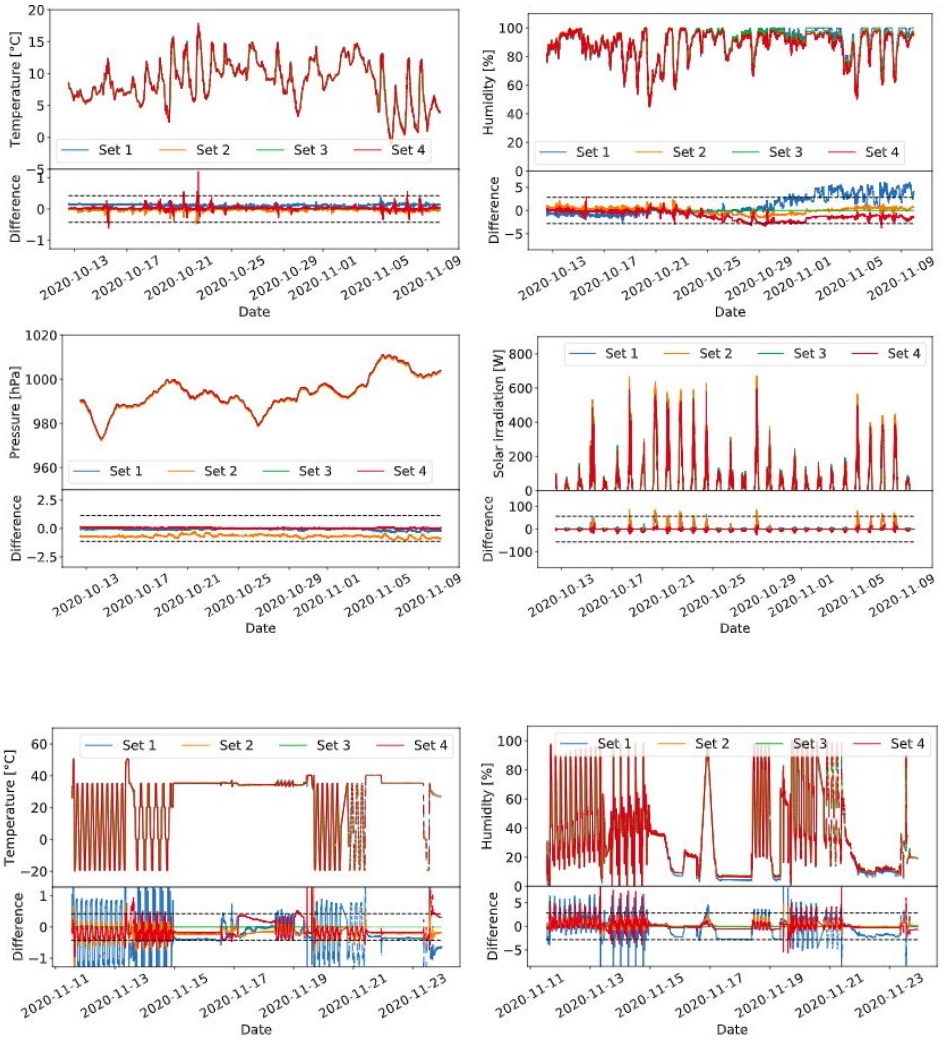


Cross-calibration

Four sets of weather sensors deployed on roof of Joint Laboratory of Optics (Olomouc, CZ)

Climate chamber cycling

- Temperature cycles -20--35 °C
- Temperature steps of 20 °C
- Low humidity test (ca. 5 %)
- Humidity cycles 5--100 %



Outlook

AEROSITEs being shipped to 4 candidate sites -- to be deployed by local crew

Data taking at least two years (periodical retrieval about every 2 months) starting end of summer

Thank you for your attention

The work is supported by project LTT20002 of MŠMT, Czech Republic