

## → FRINGE 2011 WORKSHOP

Advances in the Science and Applications of SAR Interferometry and Sentinel-1 Preparatory Workshop

# Atmosphere I & II Sessions

**Chairs: R. Hanssen, F. Rocca, D. Perissin & D. Small**

**Seed Questions**

1.
  - a) How good are we at predicting the tropo/iono path delay disturbances within a single SAR scene before touching the SAR data itself?
  - b) What is the experience within local high density GPS networks, and
  - c) away from them (globally)?
2. Would standard annotation of global estimates be useful, e.g. within S1?
3. On weather models:
  - We see that INSAR and Numerical Weather Predictions are synergistic. How close are we to a systematic use of this synergy?
  - The discussion on the general feasibility of using NWP models for APS correction should focus on reliability, rather than precision?

- Statement: NWP models are intrinsically unable to reliably model atmospheric delay variability due to turbulent mixing. This is mainly due to the spatio-temporal resolution of the data inserted into the NWP models. Would you agree?
5. On Atmospheric Phase Screen (APS) estimation from SAR data only
    - Disentangling the atmospheric and deformation component of the interferometric phase is difficult in case of deformation phenomena with (i) a complex temporal behaviour and (ii) smooth spatial behaviour. Errors between the two components as severely correlated. How can we assess the quality of APS estimation in such cases?
  6. On MERIS/MODIS for APS correction in InSAR: if it works, you don't need it, and if you need it, it does not work. Would you agree?

## 7. New systems and missions

- Would a geosynchronous system be really useful for atmospheric retrieval for interferometric applications? Will the low spatial frequencies obtained in Sentinel 1 IWS or EWS modes improve the synergy?
- As established for TSX, should we recommend that future SAR formats (e.g. S1) support a clear separation between (a) calibrated radar timing information (SWST bias), and (b) range-dependent path delay (subdivided into ionosphere and troposphere)

## 8. On GPS and InSAR

- What is the state of the art of the GPS and INSAR synergy? How about the future GPS systems?

9. A meteorologist and an InSAR-ologist are standing at the bar. The meteorologist says: “Don’t call us, we’ll call you.”