Applications of SAR Polarimetry on Land: Agriculture, Urban, Archeology

Session summary
Agriculture

• 3 presentations:
  – Time series with compact-pol data
  – Phenology retrieval at C-band for rice
  – Incidence angle influence on polarimetric response of wheat and bare surfaces

• Comments during the round table:
  – There is no competition between time series and polarimetry, but complementariness. One can serve to solve the ambiguities of the others.
  – Recommendation: to continue on this line (time+polarimetry) for agriculture applications.
  – Rice monitoring: tests with ScanSAR dual-pol data (wide swath) of Radarsat-2 are convenient. It is an important application, attending to food security reasons.
Urban

• 3 presentations:
  – Comparison of many different methods for urban classification
  – Use of polarimetry at X-band for both classification and 3D rendering
  – Hybrid PolInSAR for urban studies

• Comments during the round table:
  – Additional effort in e.m. modelling is needed to understand complex scenarios
  – Polarimetry vs resolution: application dependent, but
    • POLSAR can provide wide scale maps
    • High resolution provides information on changes and small details within a city
  – Fusion with other data and sensors should be studied.
Archaeology

- 2 presentations (new application domain):
  - Sudan: known archaeological area with difficult access
  - Iraq: remains of an old city
- Polarimetry can contribute in the detection or identification of linear/long features much better than other techniques.
- Added value for end-users: to be assessed.