Applications of SAR Polarimetry : Other

(*7 presentations : 4 topics*)

PolSARpro :

education tool, processing assistant, or application demonstrator ?
Feedback from the users are very important for the future development !
WHAT DO YOU NEED ?

Full consensus from the reserach community for the continuity of the development of PolSARpro : YES

Actions :

- **Feedbacks from the users (dynamic development)**
- **Applications driven**

- **Simulator package (PolSARproSIM) -> Scott Hensley**
- **Pol-InSAR dedicated functionalities -> Andrea Minchella (NEST)**
- **Coherent decomposition -> Rhida Touzi**

Multi-channel Analysis (time-series, multi-incidence angle, multi-polarimetric channel …):

Change information contains more knowledge when taking multi-channel into consideration. Effect on the system acquisition mode (complexity).
Change detection methodology : mature ?

Comments during the round-table

The mechanism of Polarimetric characteristics in understanding 'physical changes' in change detection need to be further explored.

Time series technique is surely helpful in change detection.

Suitable and enough data sets are necessarily needed to support this research, specific campaigns need to be organized.

Scattering mechanisms affected by multi-incidence angles can't be ignored

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Recommendations :

- **Trying to find an important time-serie dataset (> 10 images)**
- **Could be a common validating dataset for the community.**
- **Comparing performance of algorithms**
- **Dedicated session (?)**

Segmentation / Classification :

Different approaches combining pre-processing (decomposition) or features extraction.
Sensitivity to the size of the analysis window, distribution (non-gaussian, Wishart …) ?
Sensitivity to the acquisition mode (incidence angle, orbit …) ?
Radar vs Optical classification ?

Taking into account the acquisition configuration

Recommendations :

- **Including in PolSARap a theme concerning the influence of the incidence angle for all types of application.**

Pol-InSAR and urban area application ? (open question)

Comments during the round table

Modeling and Methodology used in nature scenario seems difficult to be applied in urban area, such as for vehicle and other urban canyon

Urban application is still on the way to satisfy end users requirements according to automation, efficiency, cost and etc.

Yamaguchi and related research work on polar. contrast enhancement should be restudied