

Extension Phase Proposal

**ALOS PALSAR Winter Coherence and Summer Intensities for
Large Scale Land Cover Mapping in Siberia**

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Project objective

- Implementation of ALOS PALSAR winter coherence and summer intensities for large scale land cover mapping in whole Siberia
- Making use of the powerful parameter coherence for the derivation of several land cover and biomass classes
- Increasing the accuracy of the so far derived maps and the number of classes
- Development of a robust, repeatable and automated monitoring approach

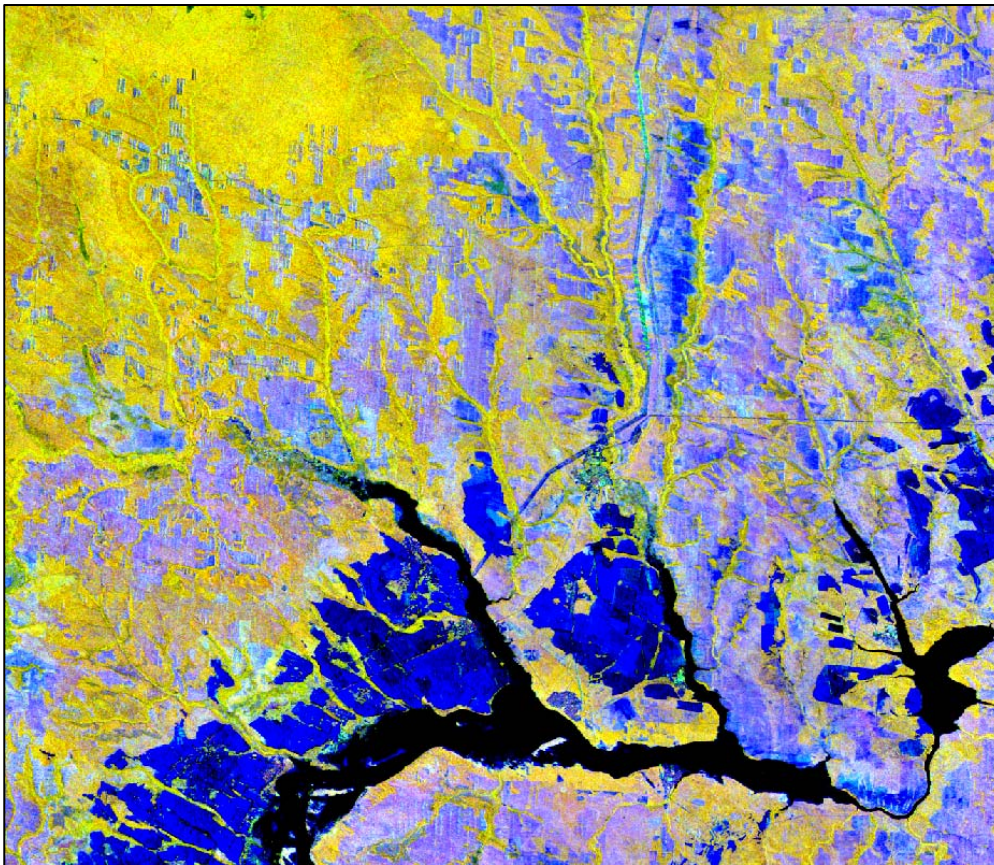


Major Landcover Types

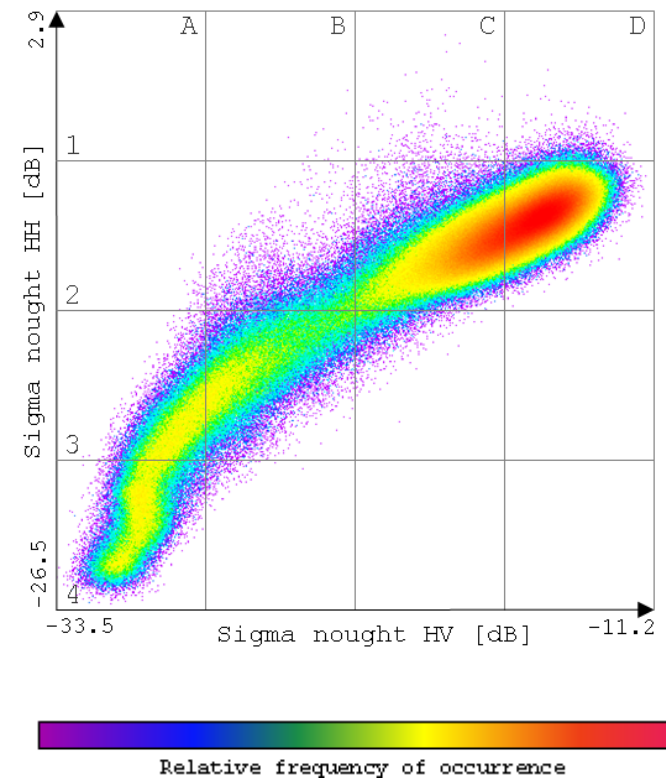
1. Forest
2. Old clear-cut (considerable regrowth)
3. Recent clear-cut
4. Fire scar
5. Agriculture
6. Water
7. Urban Areas



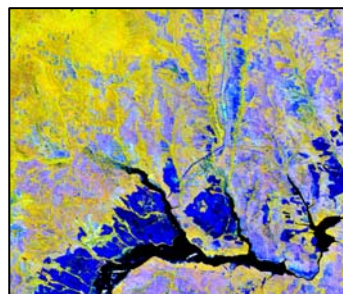
Power of Coherence



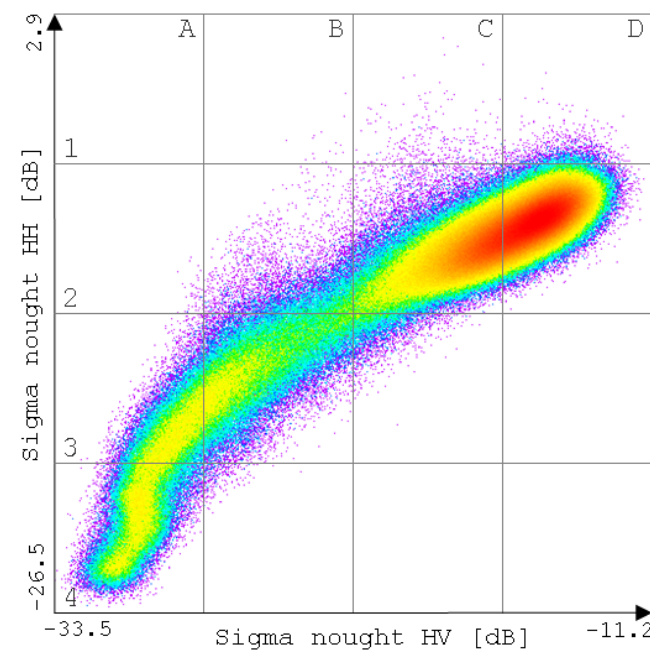
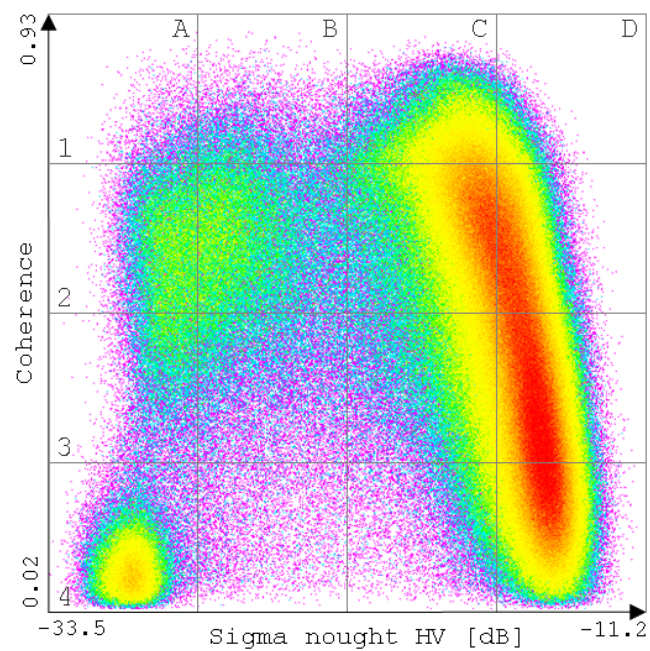
HV / HH / Coherence



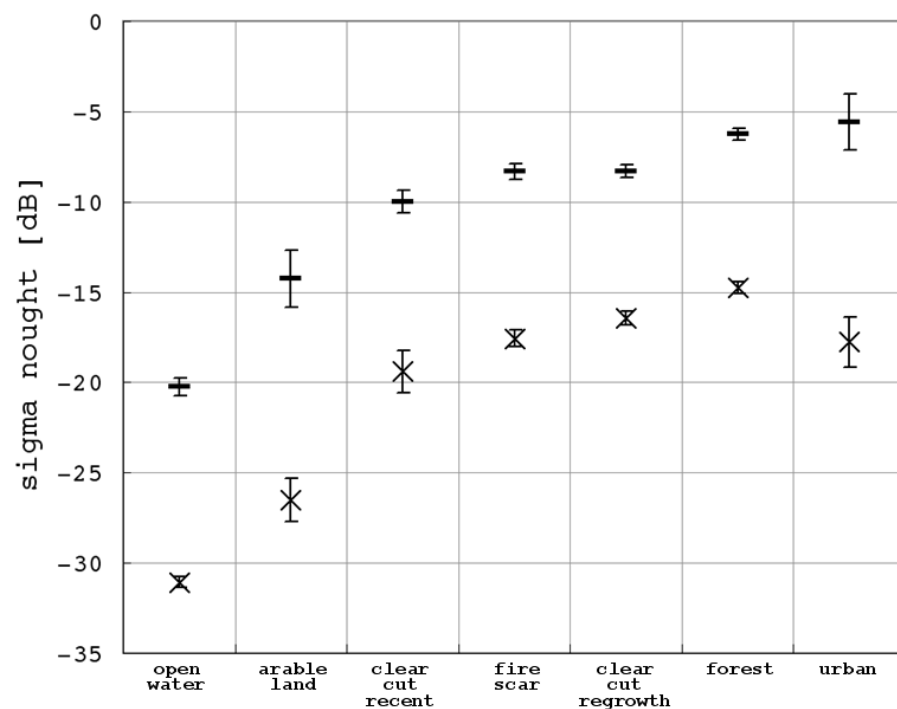
Power of Coherence



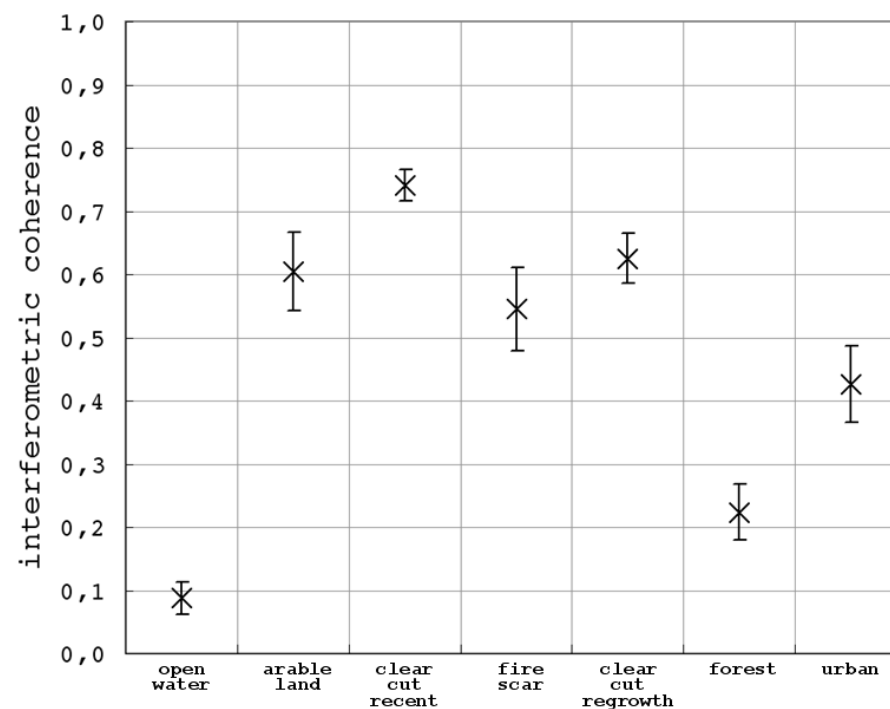
HV / HH / Coherence



Power of Coherence



Signature plot for intensities HH (-) and HV (x)



Signature plot for interferometric coherence

- Year 1: Prototype area as at phase 1 (central Siberia)
- Year 1+2: Central plus western Siberia
- Year 2: Central plus eastern Siberia (south of 65° N)



Outline of project plan

- Data availability check and data procurement
- Intensity processing and Coherence estimation
- Data quality check
- Methodology adaptation and extension
 - Threshold based approach
 - Incorporation of backscatter and/or coherence models
 - Derivation of forest mask and application of model(s)
- Establishing close cooperation with Russian forest administrative body (high level)



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Time schedule

- Coherence estimation including data order etc. (**Prototype area**) – KO+6
- Map production and accuracy assessment – KO+9
- Report and recommendation to proceed or not proceed – KO+9
- Coherence estimation including data order etc. (**Extended Prototype area**) – KO+12
- Map production and accuracy assessment – KO+24
- Report and recommendation to proceed or not proceed – KO+24
- Coherence estimation including data order etc. (**Siberia**) – KO+30
- Map production and accuracy assessment – KO+36
- Final report – KO+36



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Definition of deliverables

- a) Detailed description of product and mapping approach, including accuracy assessment, for the prototype area of phase 1 (85-110° E, 50-65° N)
- b) Coherence images if required
- c) Produced land-cover maps



Data requirements

- PALSAR mode: FBS/FBD winter (two acquisitions), FBD summer (one acquisition)
- Acquisition strategy requirements: keep strategy (to be discussed)



Data requirements

- PALSAR mode: FBS/FBD winter (two acquisitions), FBD summer (one acquisition)
- Acquisition strategy requirements: keep strategy (to be discussed)
- Alternative: 1.) Access to archived data for coherence estimation for whole Siberia, 2.) Keep acquisition strategy for prototype area (maybe slight alteration of former prototype area) for continuation of coherence based monitoring
- Processing requirements: as before for intensities, **to be discussed for coherence related images**

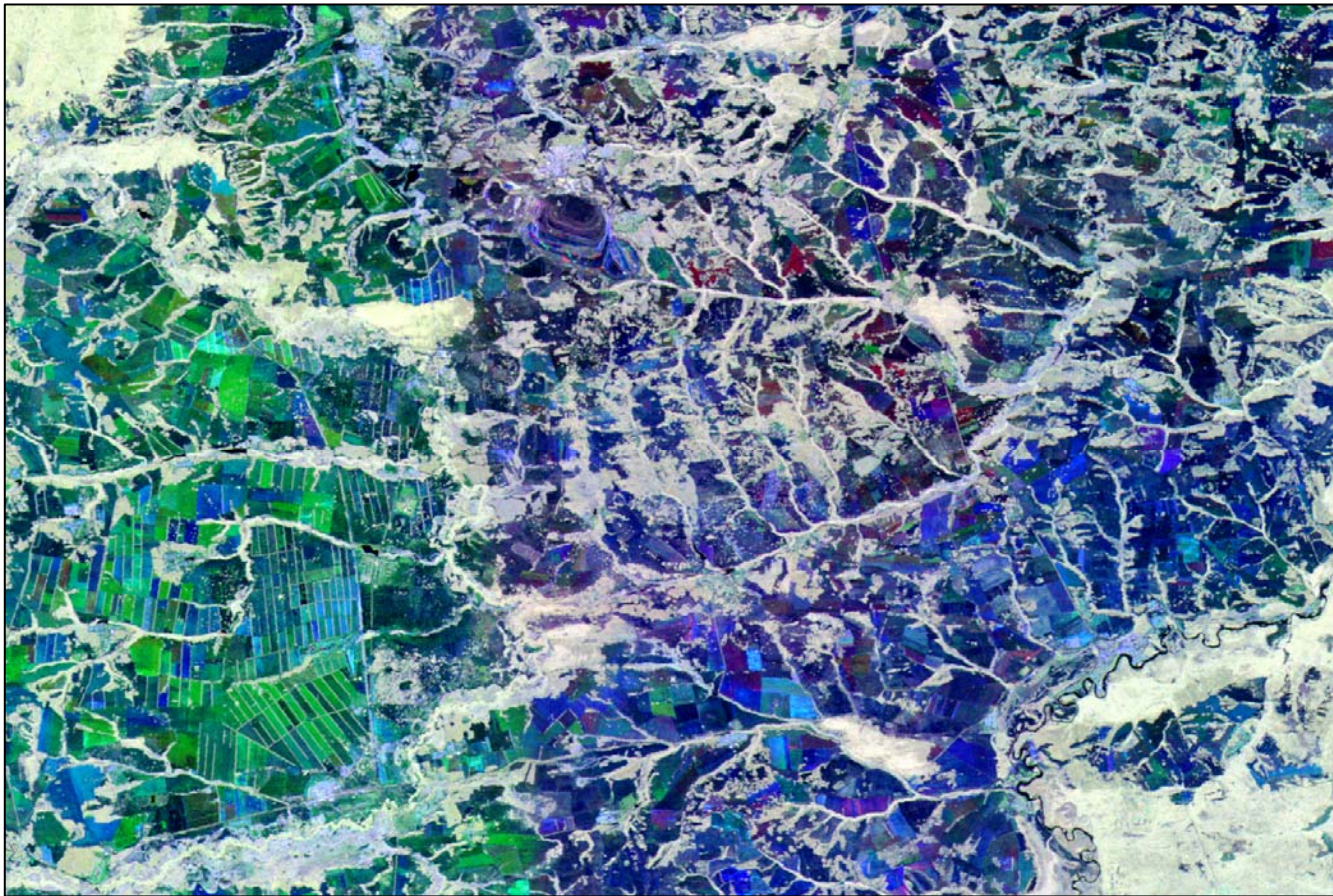


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ALOS

K&C Initiative
An international science collaboration led by JAXA

- Thank you



FSU JENA, GAMMA RS



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