

K&C ALOS: Water prospecting in arid Africa

Product Leader: Philippe Paillou

Affiliation: OASU (France)

Product Team :

Sylvia Lopez (OASU, France)

Francesco Holecz (SARMAP, Switzerland)

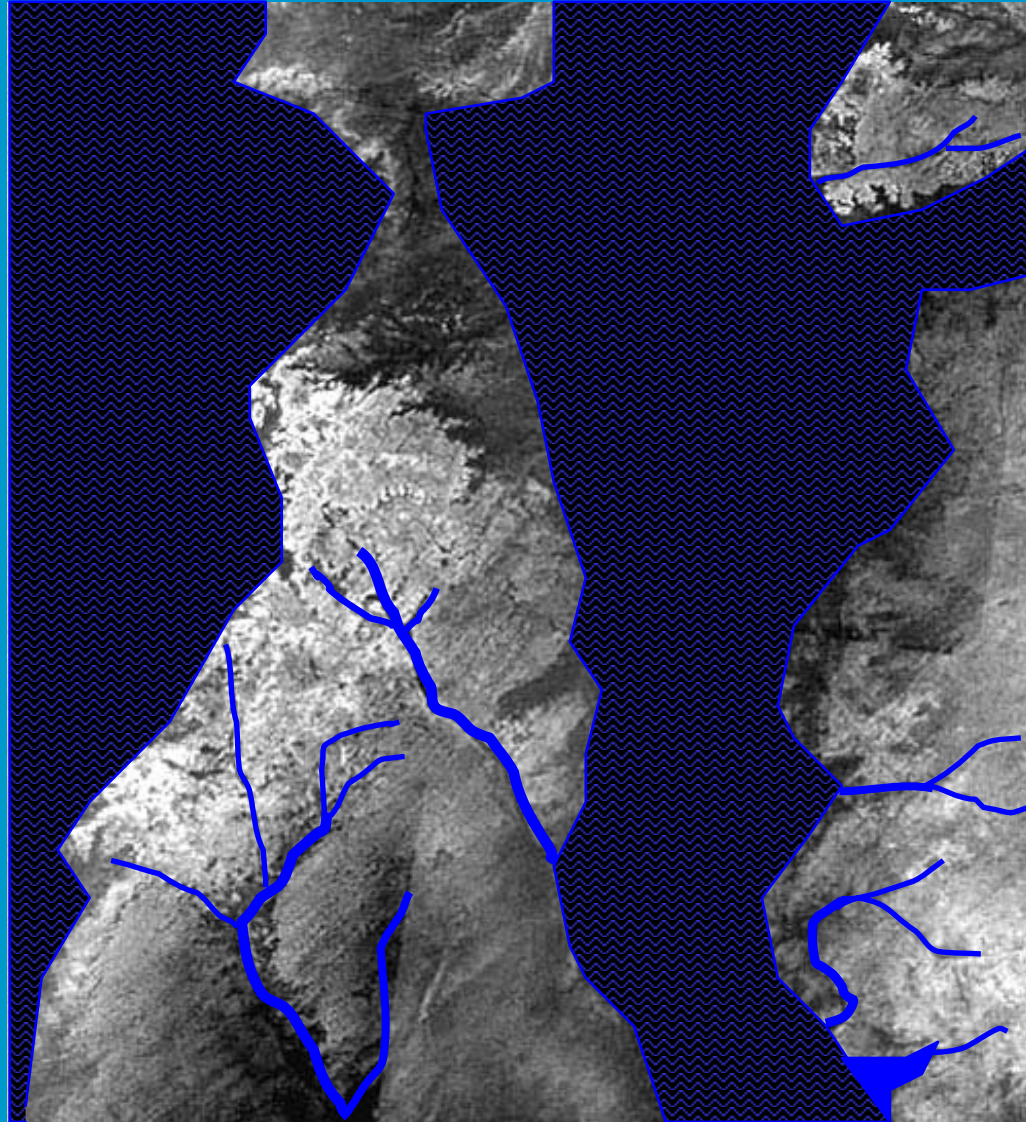
Tom Farr (JPL, USA)

Agreement status: Signed

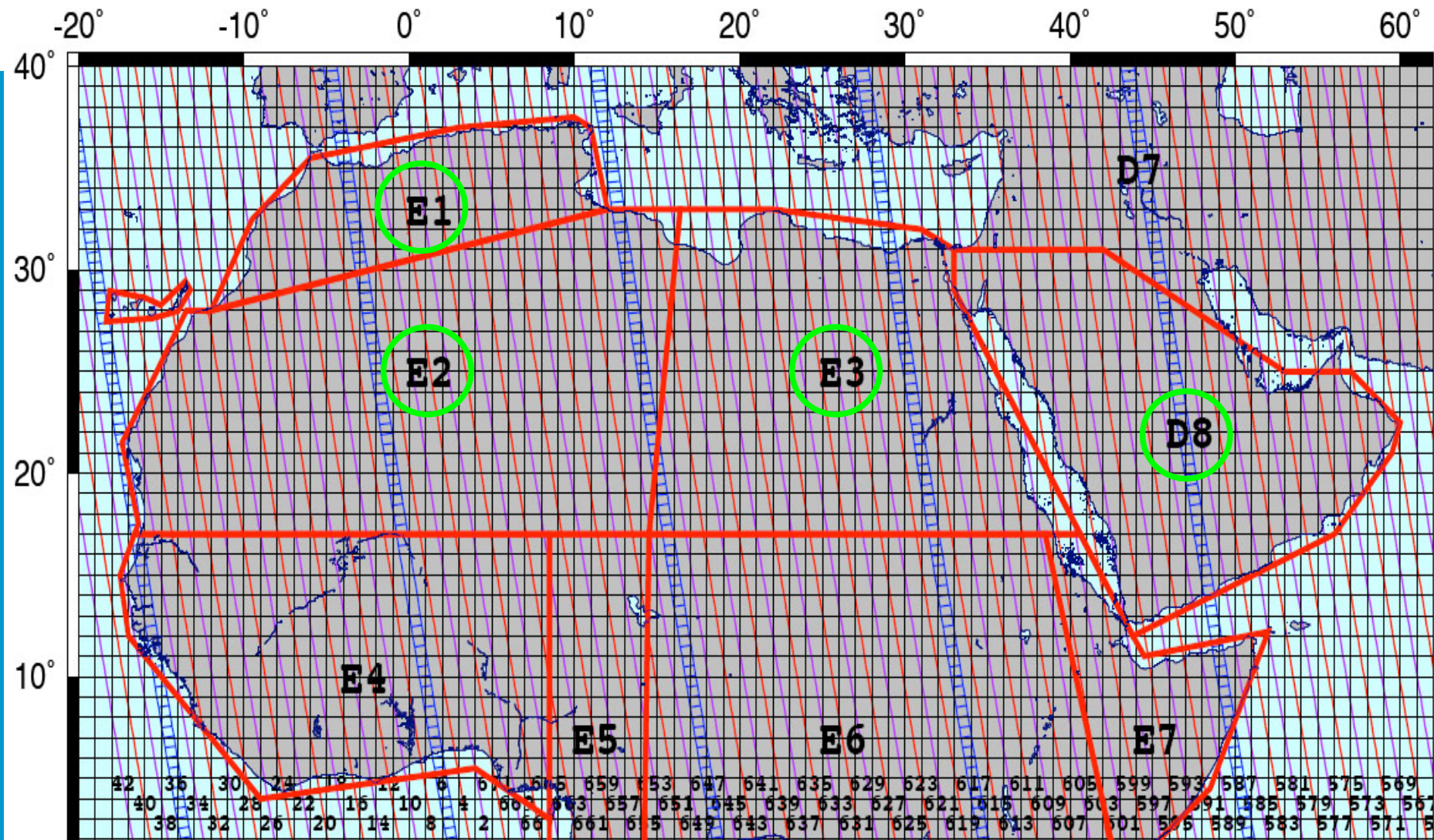
Project objectives:

- 1) Use penetration capabilities of L-band SAR to map subsurface geology in arid Africa: identification and spatial location of unknown geological features (paleo-rivers and lakes, faults, tectonics, impact craters) as a basis to new water prospecting plans.
- 2) Use dual-pol 50m resolution calibrated PALSAR path images to produce a mosaic of Sahara (Prototype Area 1) and Arabia (Prototype Area 2) registered to SRTM 1°x1° squares, and accessible through **Google Earth** interface (?).
- 3) Generation of subsurface radar (HH, HV/HH) maps (2007-2008)
- 4) Generation of 1-year subsurface change map (2008)

Product example : subsurface map



Water prospecting in arid Africa



Location of Prototype Areas

Time plans

Data acquisition schedule

Cycle 12: June 07, HH+HV 34.3, Areas E1+E2+D8

Cycle 13: July 07, HH+HV 34.3, Area E3

Cycle 20: June 08, HH+HV 34.3, Areas E1+E2+D8

Cycle 21: July 08, HH+HV 34.3, Area E3

K&C Product Deliverables (before end of Year 3)

1.1 Radar mosaic (HH+sub) over Sahara and Arabia (December 2007)

1.2 Ratio mosaic (HV/HH+sub) over Sahara and Arabia (February 2008)

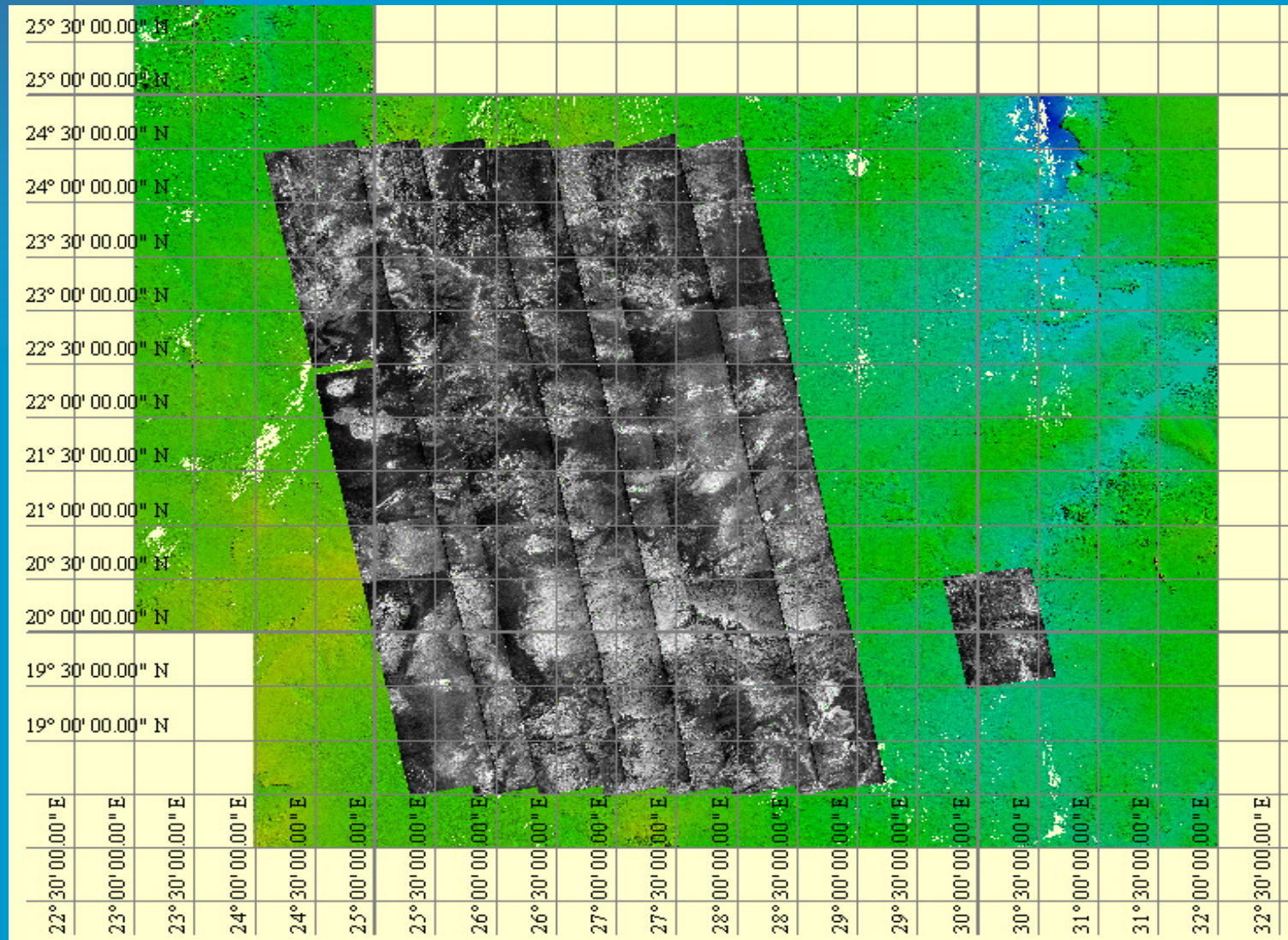
2.1 Radar mosaic + 1 year change map over Sahara and Arabia (December 2008)

Prospects for Years 4-6 (assuming agreement extension)

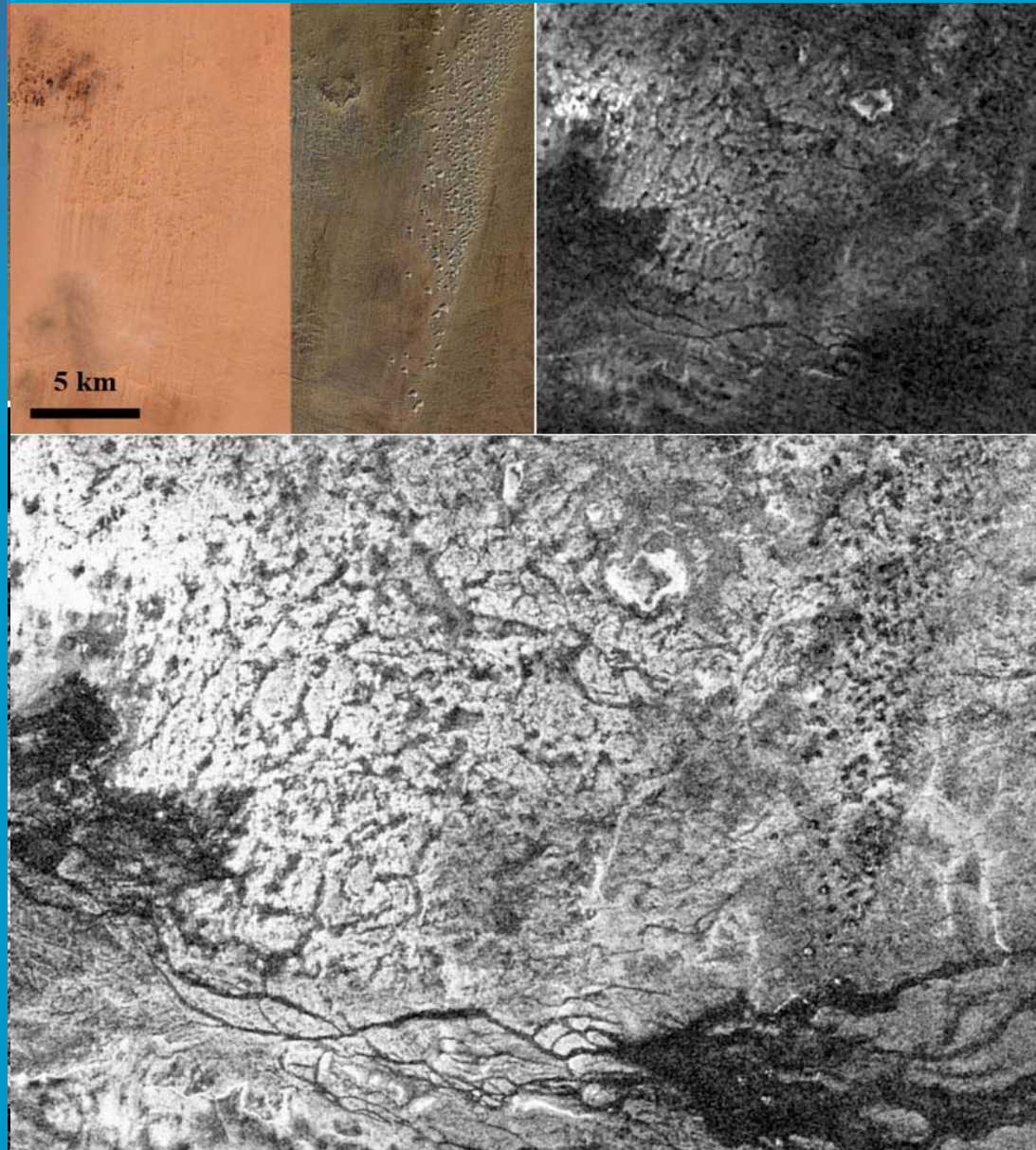
Extension to other arid regions on Earth:

Gobi (part of A7), South Africa (E6 + E7), Australia (part of C3)

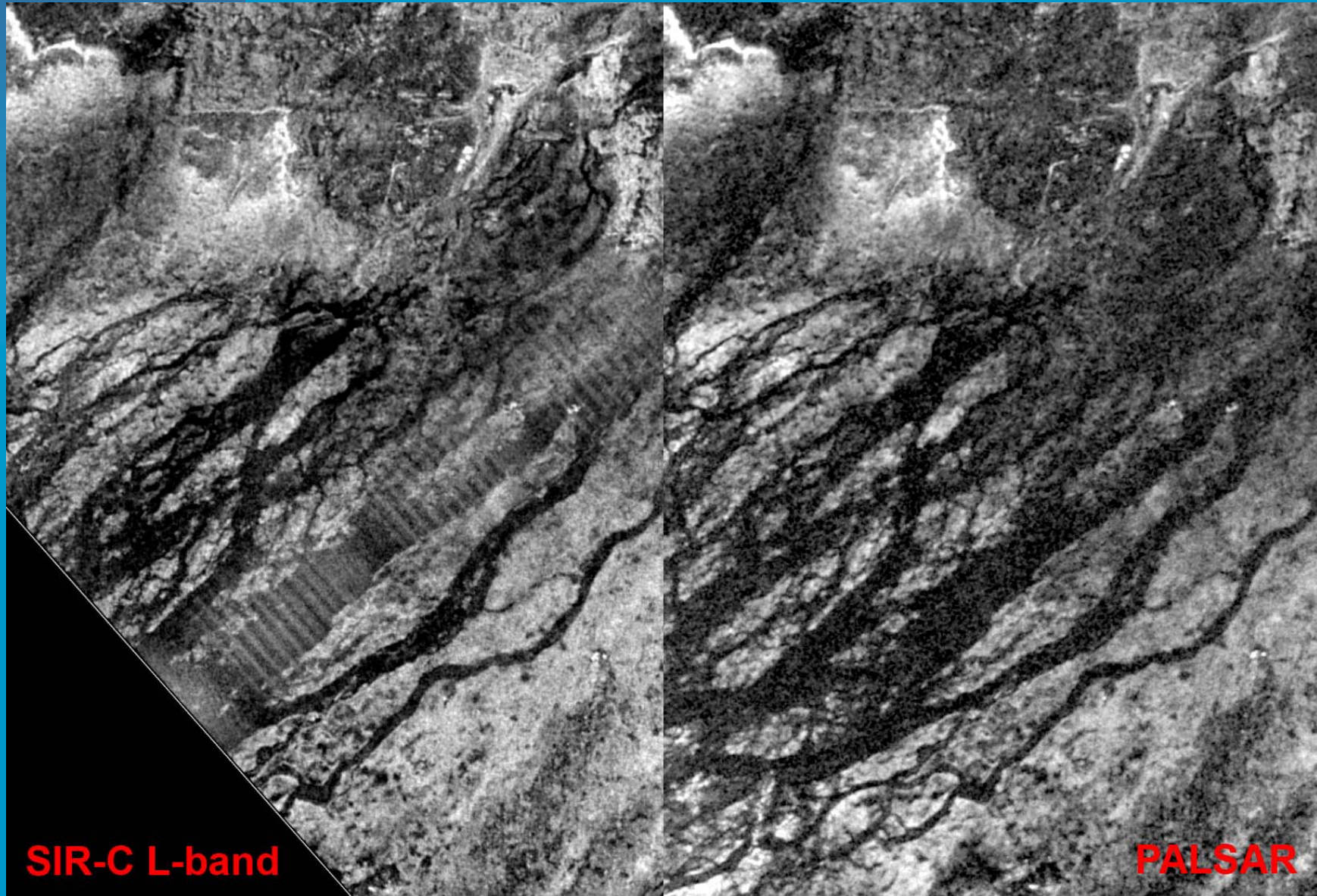
First results over E3 region: 84 PALSAR scenes



Comparing PALSAR to JERS-1: we can see deeper



Comparing SIR-C to PALSAR: very good



Status & Plans

Status

Mosaicking software (+WMS / GE) close to be ready

Tests being performed on PALSAR sample strips (radio+geom)

First acquisition over Sahara & Arabia: now !

CNES support for 2006-2008

Plans

PALSAR/JERS-1 comparison to be presented at IGARSS'07

First Sahara & Arabia mosaic ready for end 2007

Airborne SAR (Sethi – ONERA) + fieldwork in Egypt (February 2008)