



The SARvanna Project

SAR Mapping of Vegetation Structure in the African Savanna

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CSIR-SAC

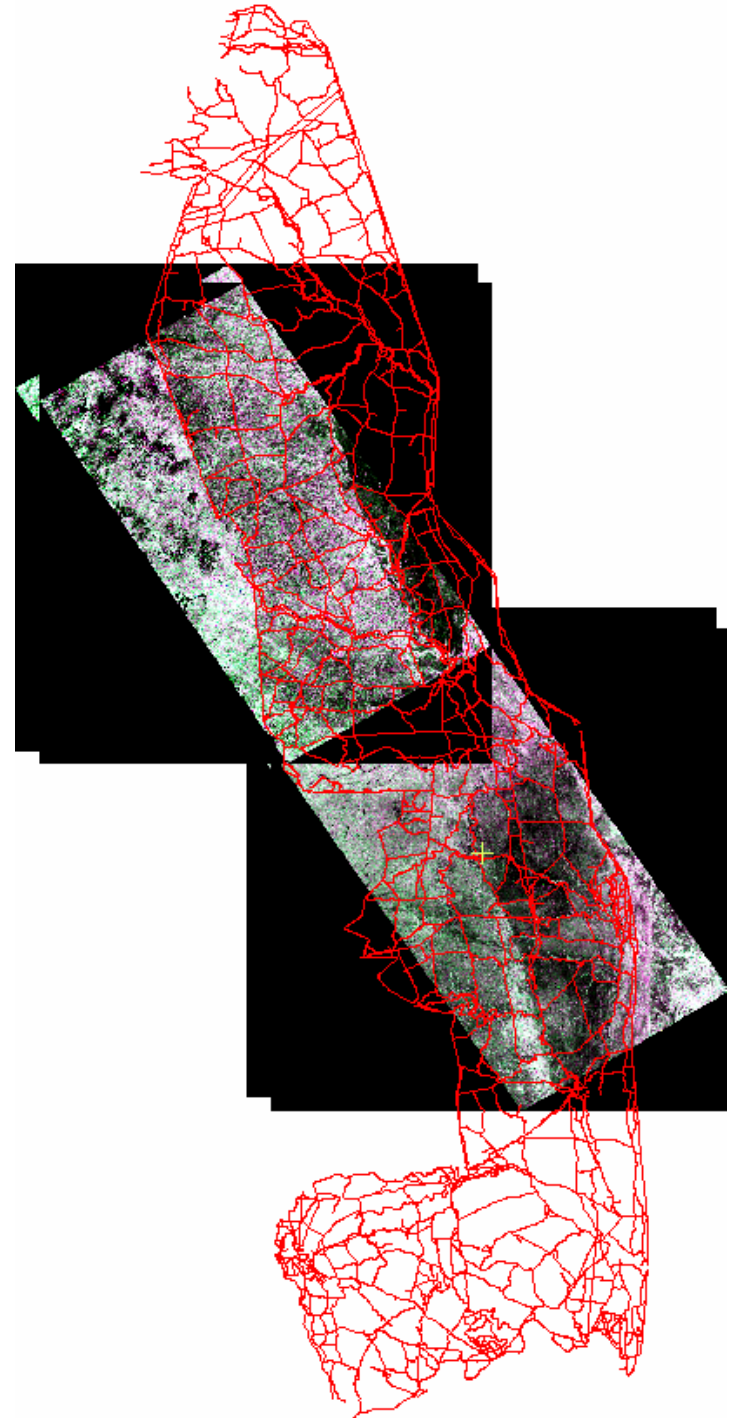
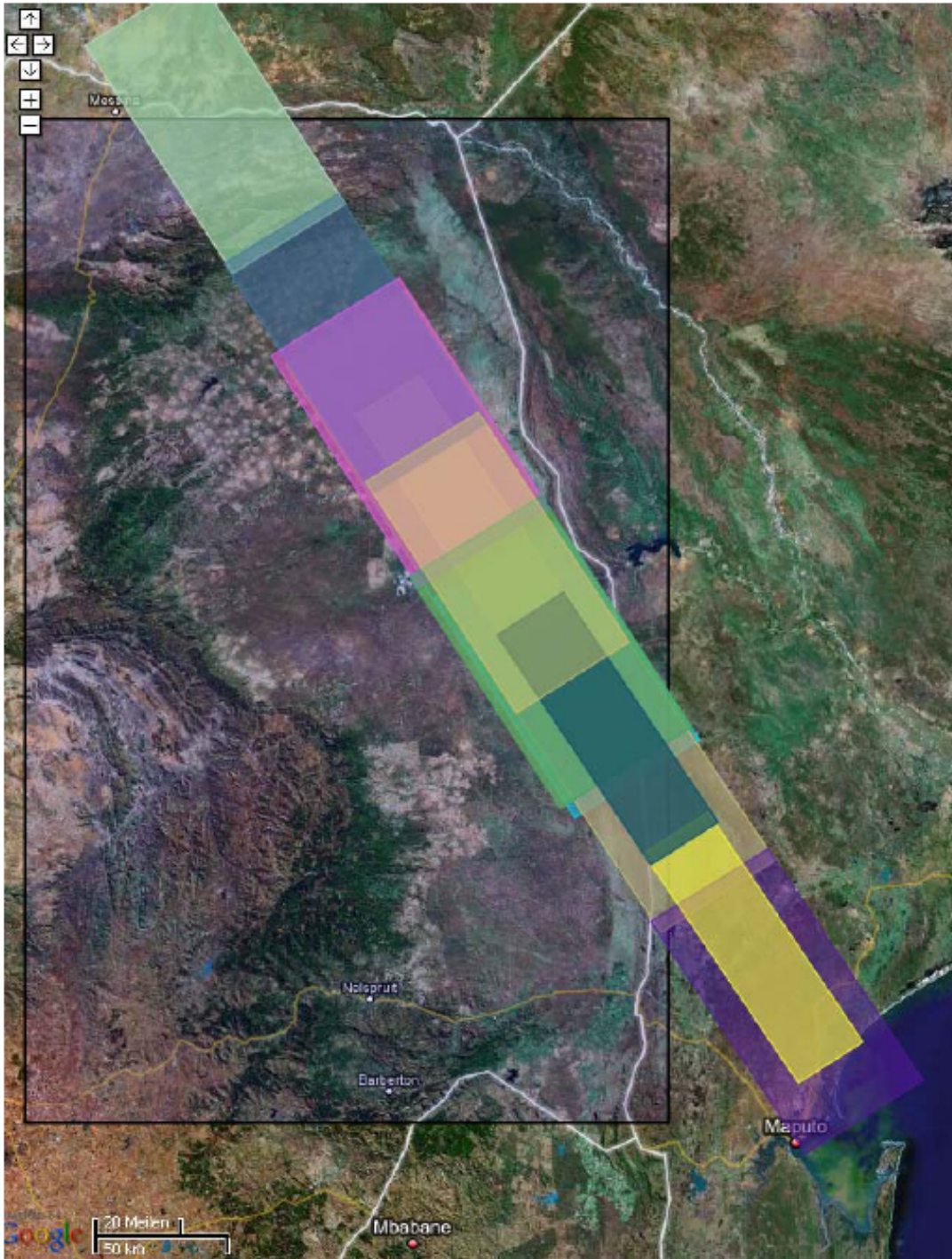
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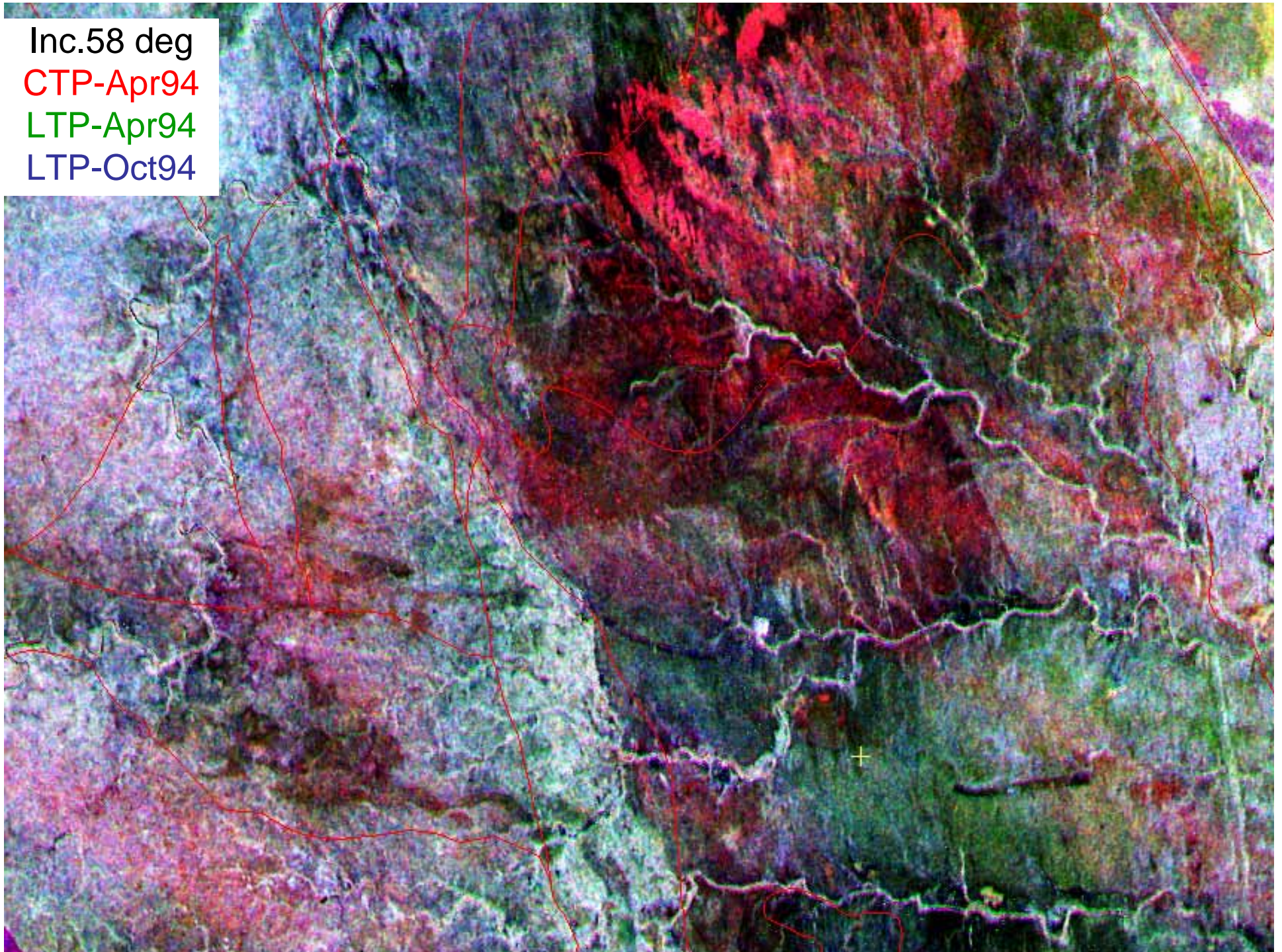
Univ. of Witwatersrand

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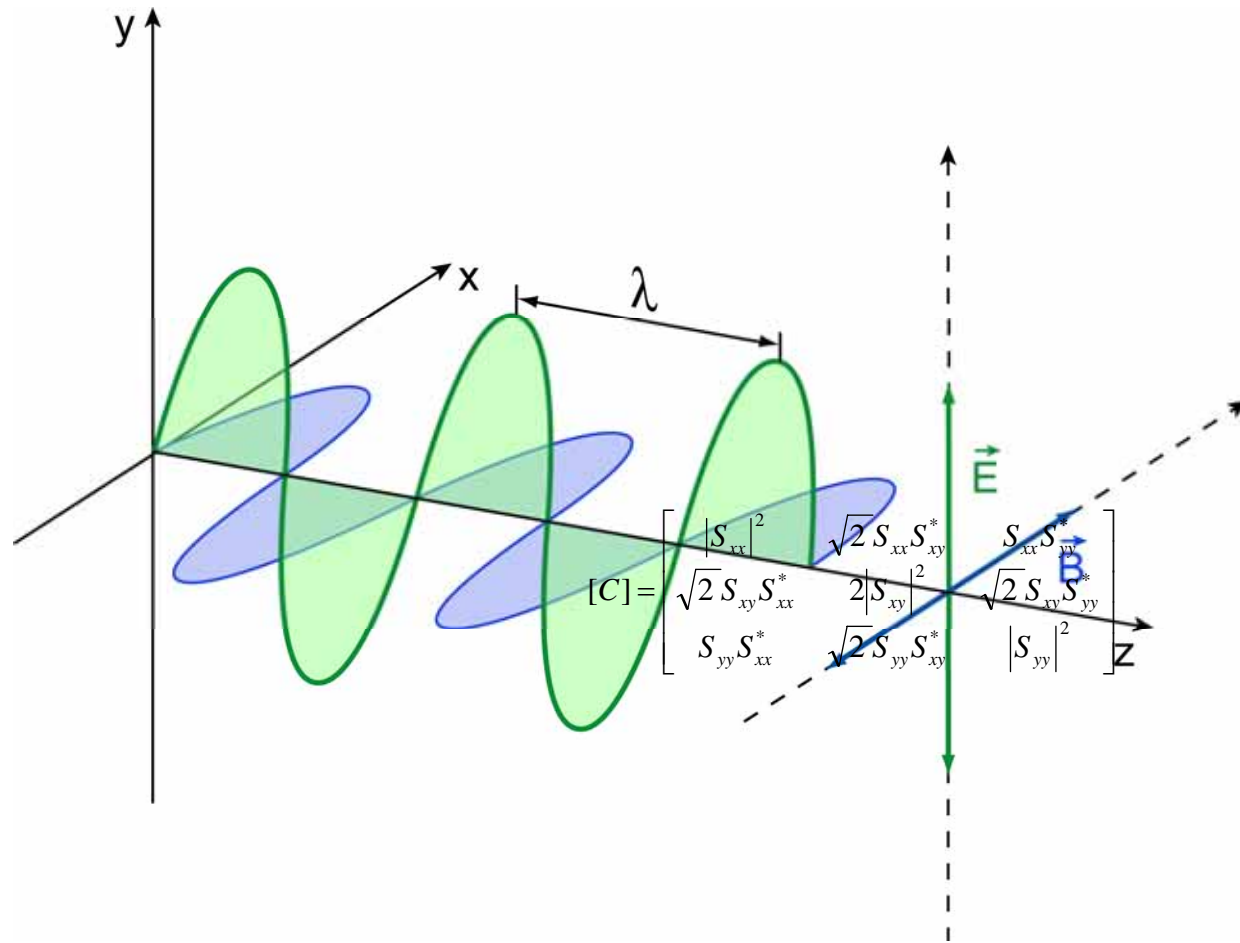
Acknowledgement: Registered SANPark Project and NRF/BMBF-Project (SUA 08/54)



Inc.58 deg
CTP-Apr94
LTP-Apr94
LTP-Oct94

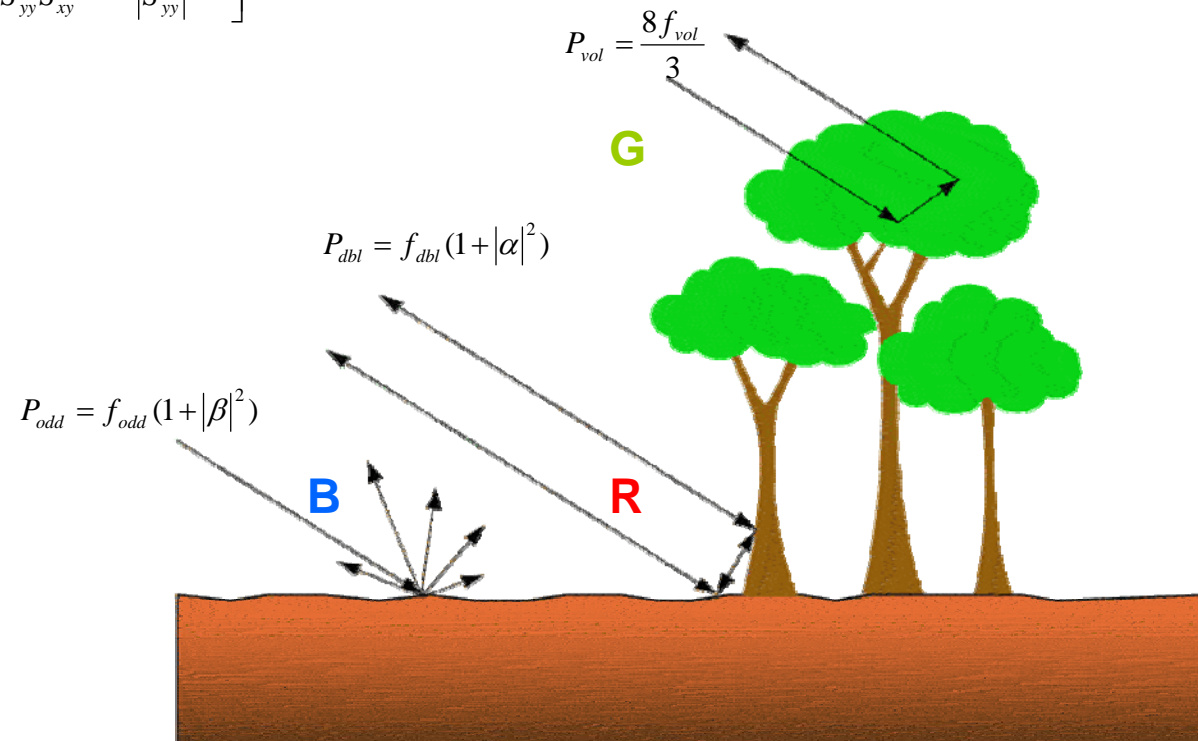


Measurement of the scattering matrix

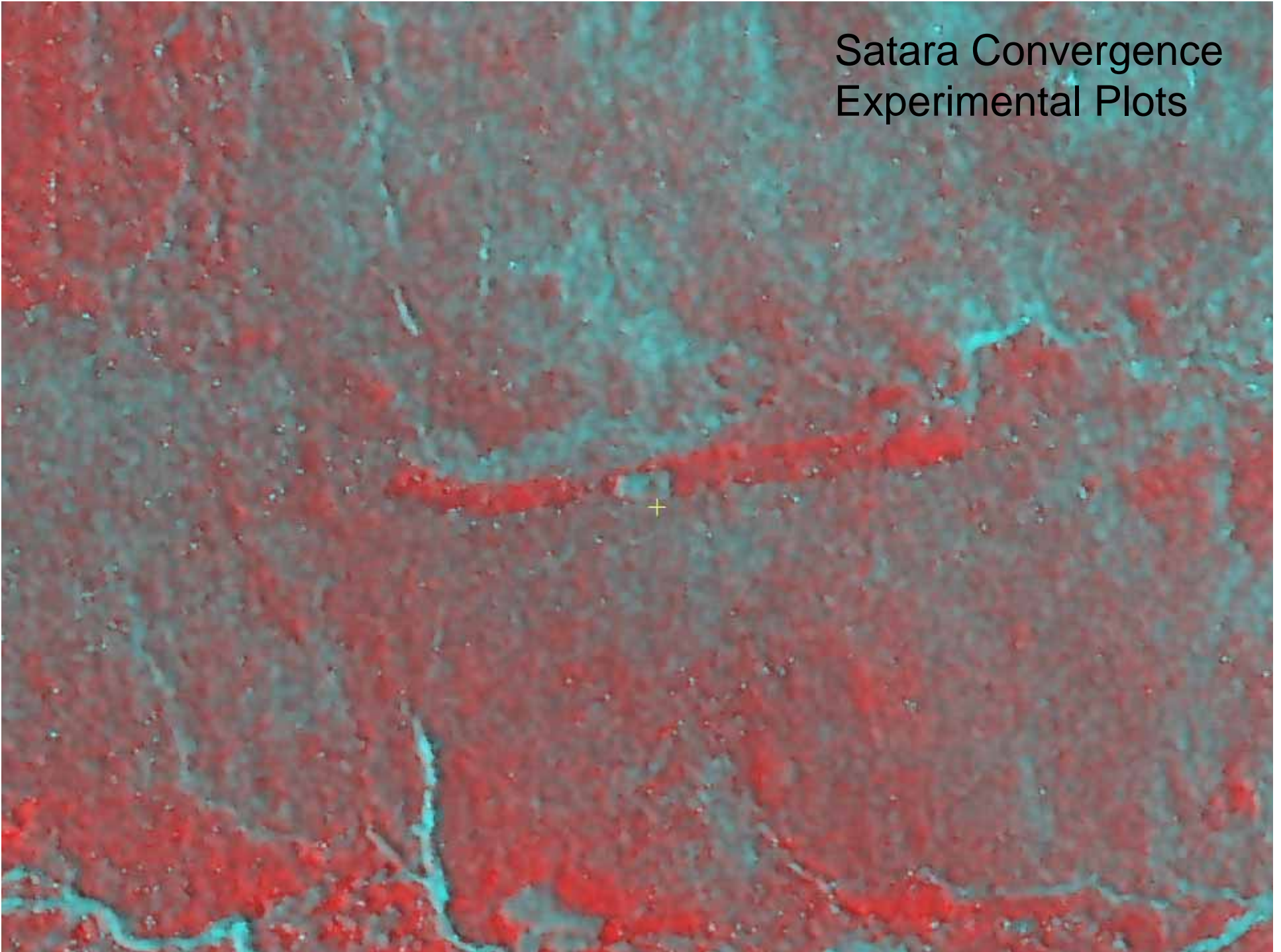


Target Decomposition Algorithms

$$[C] = \begin{bmatrix} |S_{xx}|^2 & \sqrt{2} S_{xx} S_{xy}^* & S_{xx} S_{yy}^* \\ \sqrt{2} S_{xy} S_{xx}^* & 2|S_{xy}|^2 & \sqrt{2} S_{xy} S_{yy}^* \\ S_{yy} S_{xx}^* & \sqrt{2} S_{yy} S_{xy}^* & |S_{yy}|^2 \end{bmatrix}$$



Satara Convergence Experimental Plots



The background of the slide is a false-color Synthetic Aperture Radar (SAR) image of a forested region. The image shows a dense network of tree canopies with varying textures and colors, including shades of green, blue, and purple. A semi-transparent white text box is centered over the image, containing the title and a list of goals.

The SARvanna Project – Goals

- 1) Vegetation structure map for major parts of the central Nkayeni and the northern Nxanatseni region for the year 1994
- 2) Monitoring concept using operationally available satellite radar data (ENVISAT ASAR, ALOS PALSAR, TerraSAR-X)
- 3) Investigation of synergy to BRDF-retrieved structure information
- 4) Update of the SARvanna-map for the year 2009 and 15-year change detection
- 5) Knowledge transfer through joint training courses between South-African and German universities and space agencies