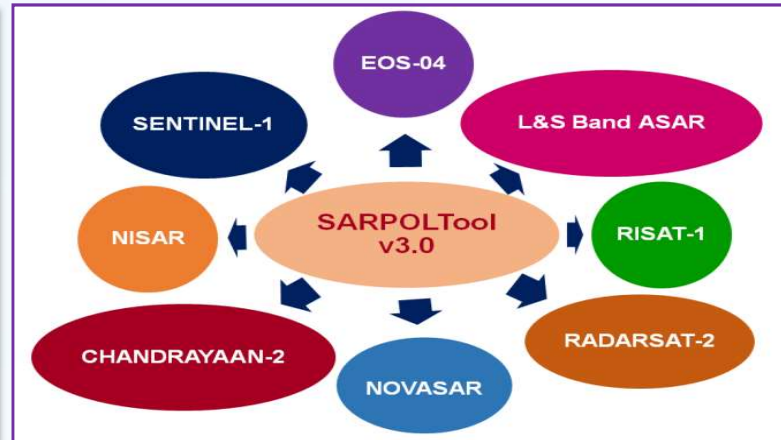


SARPOLTool – Multi-Mission POLSAR Processing and Analysis Tool

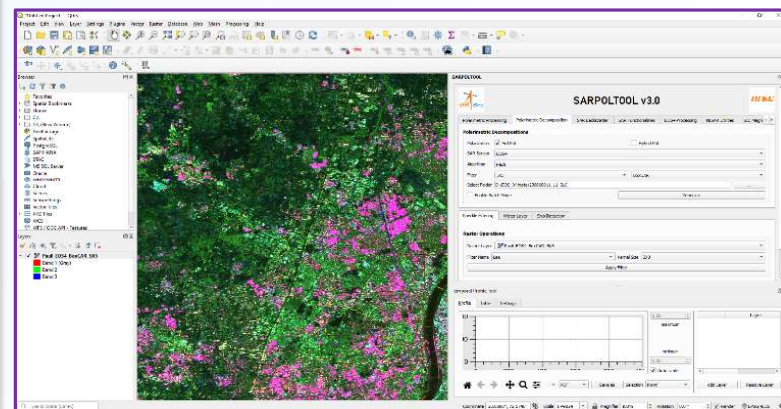
SARPOLTool is in-house developed Multi-Mission SAR Toolbox for carrying out advanced Synthetic Aperture Radar (SAR) and Polarimetric SAR (PolSAR) data processing and analysis. It provides adequate support for the end-user in order to carry out multi-sensor SAR data analysis in terms of Radar backscatter generation, speckle filtering, performing Polarimetric decomposition, and thematic product generation making it a valuable tool for applications in agriculture, forestry, urban mapping, water resource monitoring, and disaster response. This tool is available at Bhoonidhi for download under processing Tools.

Functionalities:

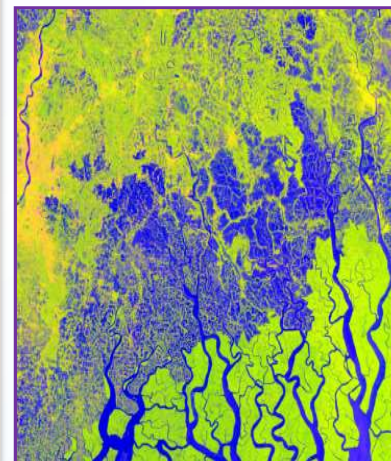
- ✓ **Unified SAR Solution:** Operates directly with SAR Sensor data as a plugin in QGIS without the need for external tools—seamless analysis and visualization.
- ✓ **Polarimetric Decompositions:** Supports full and compact polarimetric decompositions for in-depth SAR data analysis.
- ✓ **Sigma Naught Processing:** Includes sigma naught generation for accurate backscatter analysis.
- ✓ **Customized SAR Speckle Filters:** Apply tailored filters to enhance image quality, improving clarity and feature extraction.
- ✓ **Batch Processing Support:** Process large number of SAR datasets in bulk, improving efficiency.
- ✓ **Time Series Analysis:** Efficient handling of time series data for generating temporal profile to monitor dynamic changes.
- ✓ **PolSARPro Compatibility:** Generates PolSARPro compatible inputs for EOS-04 to exploit PolSARPro functionalities.
- ✓ **False Colour Composite (FCC):** Creates visually compelling false color composites from SAR data for better analysis.
- ✓ **Beam-wise SLC Mosaicing:** Seamlessly mosaic ScanSAR beam-wise Single Look Complex (SLC) products.
- ✓ **CFAR-based Ship Detection:** Utilizes Constant False Alarm Rate (CFAR) methods for precise ship detection from SAR data.
- ✓ **Radar Vegetation Index (RVI) & Pedestal Height Estimation**
- ✓ **Chandrayaan-2 DFSAR Polarimetric Processing**
- ✓ **Future SAR Mission Support:** Compatible with upcoming SAR Missions viz. NISAR and EOS-09.



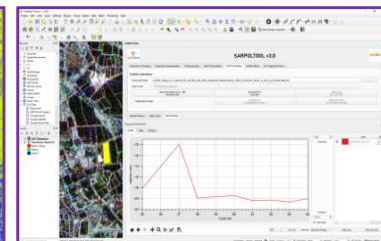
SAR Sensors Supported – SARPOLTool V3.0



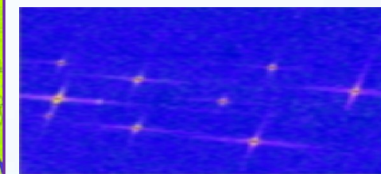
SARPOLTool Interfaced with QGIS



EOS-04 FCC Image



Temporal analysis



Ship Detection

<https://bhoonidhi.nrsc.gov.in/bhoonidhi/help/tools.html>

Web links:

bhoonidhi.nrsc.gov.in

For further details, please contact

① +91 854-2225122

✉ feedback_mpsdd@nrsc.gov.in