



Dynamics Of Surface Water Extent Using Opti-SAR Imagery



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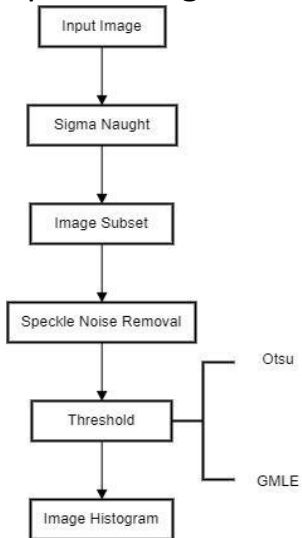
External Guide: Dr. Mehul R Pandya

MAJOR OBJECTIVES:

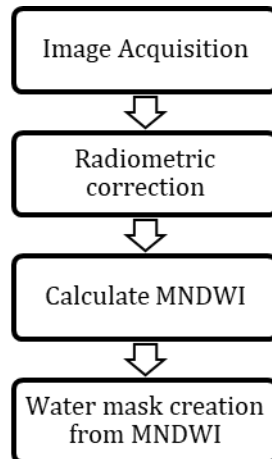
1. Waterbody extraction from SAR using a dynamic threshold.
2. Time series analysis of wetland.
3. Waterbody extraction from Optical.
4. Fusion of Opti-SAR surface water extraction.

METHODOLOGY FLOW CHART:

1. SAR Image processing



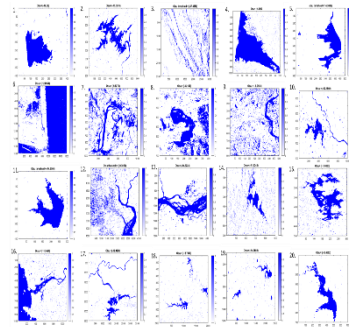
2. Optical Data processing



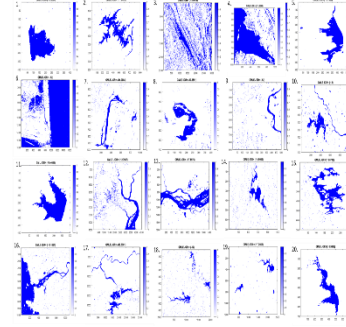
3. OPTI-SAR FUSION: Water pixels present in both the SAR and optical were combined to get the pure water pixel.

RESULTS/MAJOR FINDINGS:

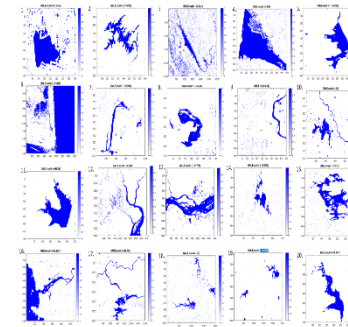
1. Otsu's Algorithm



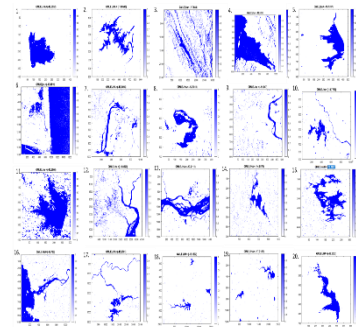
2. GMLE fixed no of looks



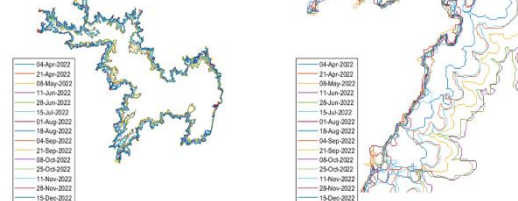
3. GMLE dynamic number of looks



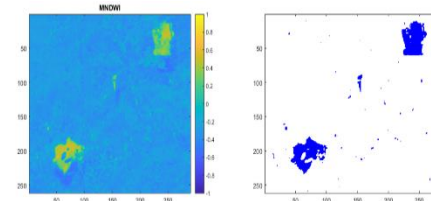
4. GMLE final parameters



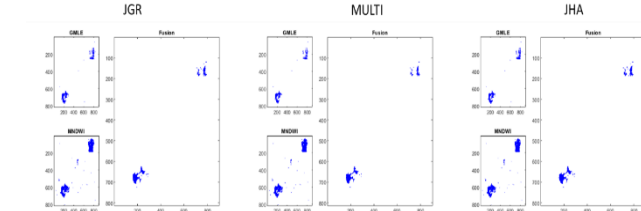
5. Time series analysis



6. MNDWI



7. OPTI-SAR Fusion



CONCLUSION: Among all threshold calculated over SAR images GMLE by final parameters and fixed number of looks gave best results in all the conditions. The fusion of Optical and SAR images for surface water mapping overcome each sensor limitations.