Comparative Study of Feature Operators for Polarimetric Synthetic Aperture Radar Images

Synthetic Aperture Radar (SAR) gained more and more importance within the last decades due to its convenient properties like independence of daylight and weather conditions. However, the automatic analysis of SAR images is still challenging. Various feature operators have either been adapted from optical image analysis or been especially developed to meet the characteristics of SAR images.

The goal of this thesis is to give an overview about standard and state-of-the-art feature operators, as well as to implement them in a unified framework. The designed system should be able to compute a certain amount of these features in an efficient manner and to provide easy and clean ways to include new feature modules.

Keywords: SAR, PolSAR, feature operator, polarimetric entropy, anisotropy

Involved tasks:
– Literature research
– Implementation of selected PolSAR feature operators

(Recommended) requirements:
– Basic understanding of remote sensing (e.g. attendance in lecture MRRS)
– Good mathematical skills
– Good programming skills (e.g. C++)

Language: German / English