DESCRIPTION FOR THE GENERAL PUBLIC ***(State the objective of the project, describe the research to be carried out, and present reasons for choosing the research topic - max. 1 standard type-written page)***

Project title: Forest change detection and monitoring using passive and active remote sensing data (RS4FOR)

Forests cover about 31% of the planet's terrestrial surface. Assessing rates of forest cover change is important for improved carbon balance quantification and climate change modelling, management of forestry and agricultural resources, and biodiversity monitoring. A practical solution to examining trends in forest cover change at regional or global scale is to apply remote sensing data and techniques. Satellite-based monitoring of forest cover can be implemented consistently across large regions at annual and inter-annual intervals.
Therefore, the main goal of this project is to develop and test approaches which allow to improve forest cover change detection and monitoring using different types of remote sensing data (optical data: Landsat 4, 5, 7, 8 (data time series from 1985 to 2017) and Sentinel 2 (data time series from 2015-17), radar data: Sentinel 1 (data time series from 2014-17) and data from airborne laser scanning (ALS) (2013, project ISOK). We will focus here on both forest cover conversion and modification, and on three different aspects of forest monitoring: (1) forest cover and its change (2) prediction models of forest structure and its change and finally (3) forest health. Our approaches will be developed for temperate forest; mountainous areas. Test area is located in the Polish Carpathians. The outcome from this project will be a set of algorithms, products and metrics for the combine use of optical, radar and lidar data in accurate spatial and temporal forest cover change detection and monitoring at landscape level.