

Field protocol for in-situ biophysical parameters collection

Abstract

The main aim of diploma thesis is to design a unified protocol intended for collecting of in-situ biophysical parameters of vegetation based on an up-to-now published literature as well as on my own experimental measuring. The key for measuring of high-quality field data, that are suitable for a subsequent validation of remote sensing products, is an implementation of unified rules as well as all the phases of data collecting, a recommended preparation before the very measuring, the choice of a sampling scheme and a processing of measured data. Based on an accessible literature the current methods of LAI data measuring were evaluated and the basic protocol parameters were defined. For designing of a proper parameterization of this protocol an experimental field measurement was carried out. A determination of a suitable number of partial measurements within ESU is given by a relationship between the number of partial measurements and MSE value. The sampling schemes stated in a literature as well as my own designed sampling schemes are subsequently tested in order to determine a suitable sampling scheme. Based on achieved MSE values the most suitable sampling scheme that was later verified in field measuring was evaluated. Based on a field measuring with a use of LAI-2200C and AccuPAR LP-80 measuring devices a suitability of these instruments was compared.

The result of this thesis is a general protocol for field data collecting and a concrete protocol for field LAI data collecting for grains that should ensure the users measuring of the representative, transferable and repeatable field data.

Keywords: LAI, biophysical parameters, protocol, field measurement, sampling