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Physical Modelling of Nikon Coolpix Camera RGB Responses for Application in non-Destructive Leaf Chlorophyll Imaging

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The poster presentation describes the emerging technology of computer aided leaf digital image analysis. The analysis technique is based on a fast, non-destructive imaging measurement of leaf chlorophyll content based on of leaf reflectance in the R band of a commercial reflex camera.
The validity of the method is demonstrated by direct comparison of conventional extraction of both leaf chlorophyll pigments from the same species with chlorophyll estimates based on leaf reflectance imagery.
The leaves of the species selected for this paper are characterized by heterogeneous chlorophyll distributions. The application of software developed for image analysis at the spatial level (2D) of physiological processes or state variables does allow to reveal and quantify the morphological structures at the origin of the spatial variation of leaf chlorophyll.

Keywords: Physical modelling, leaf chlorophyll imaging, spatial analysis, RGB reflex camera.