



Soil shadow assessment and its impact on soil reflectance

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WAGENINGEN UR
For quality of life



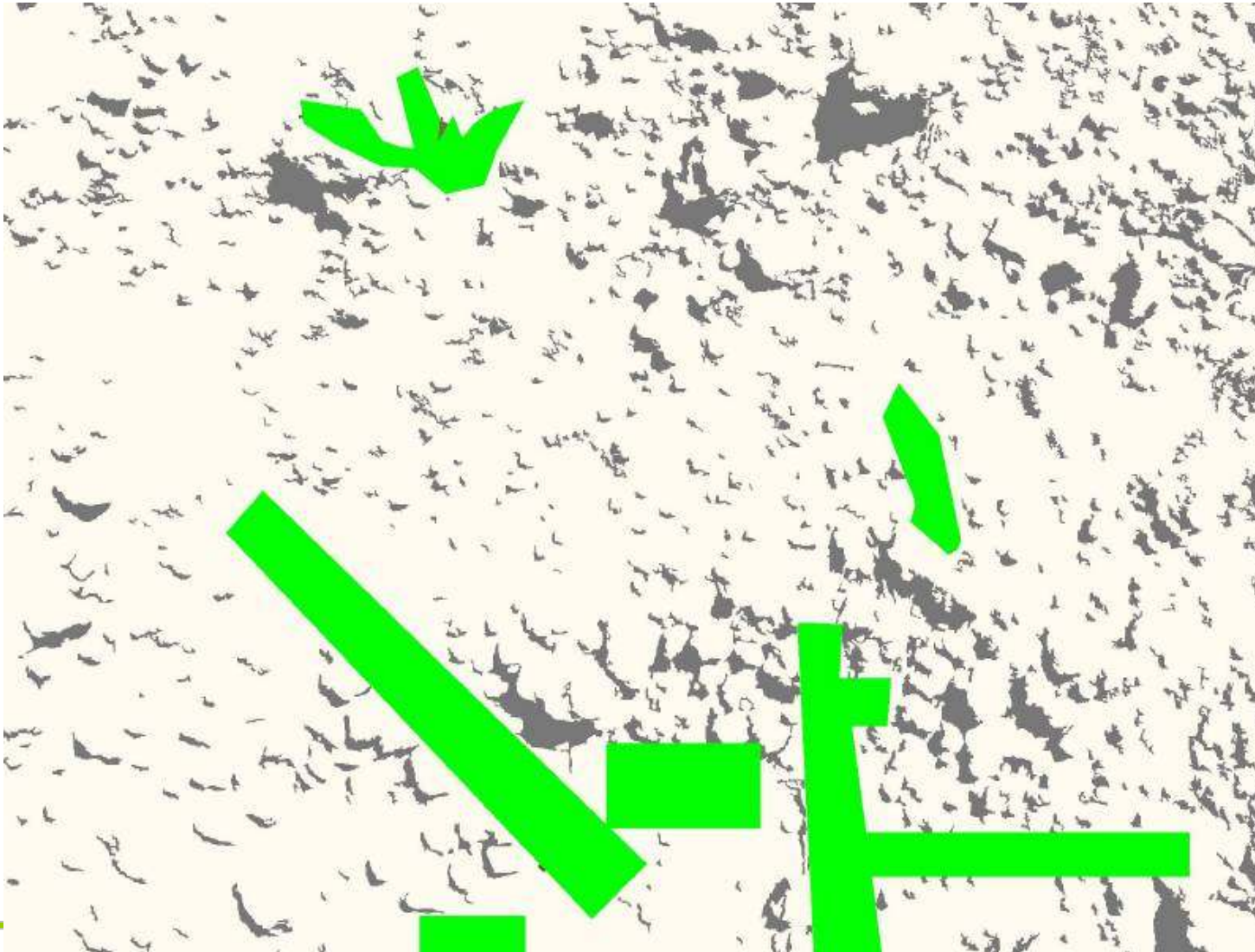


Objectives :

- Disturbing factors on the soil organic matter (SOM) – soil reflectance relationship
- Impact of shadow on soil reflectance
- Soil roughness - soil shadow relationship



Shadow assessment: 3. *Classification (in eCognition)*



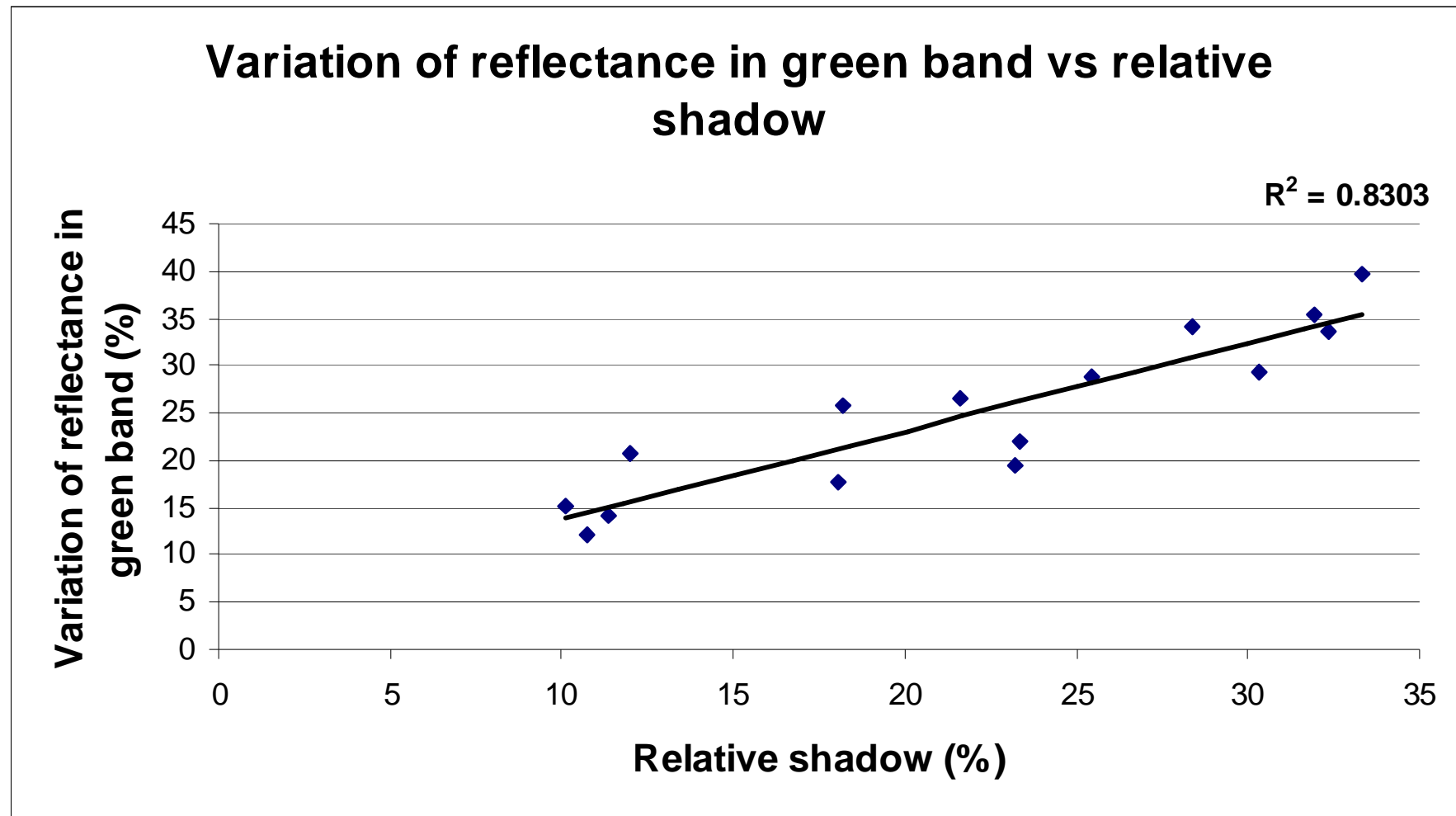


Roughness measurement





Does the soil shadow have an impact on soil reflectance?



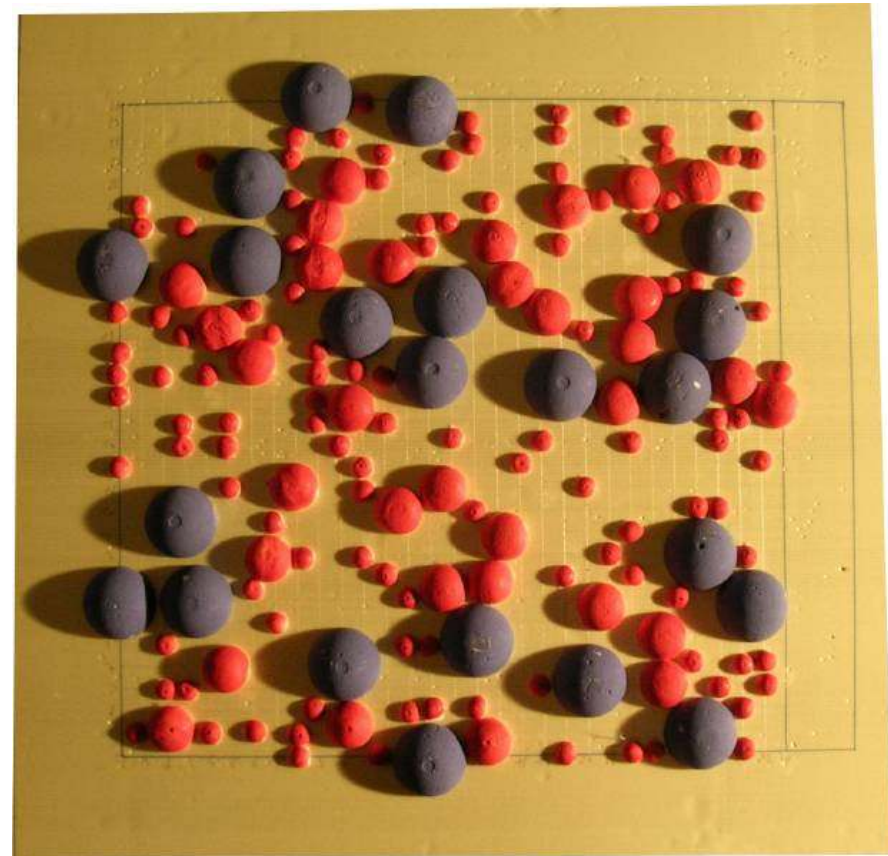


Soil microtopography modelling in laboratory

Soil clods modeled by painted half spheres of 15, 30 and 50 mm diameter (cfr Cierniewski)

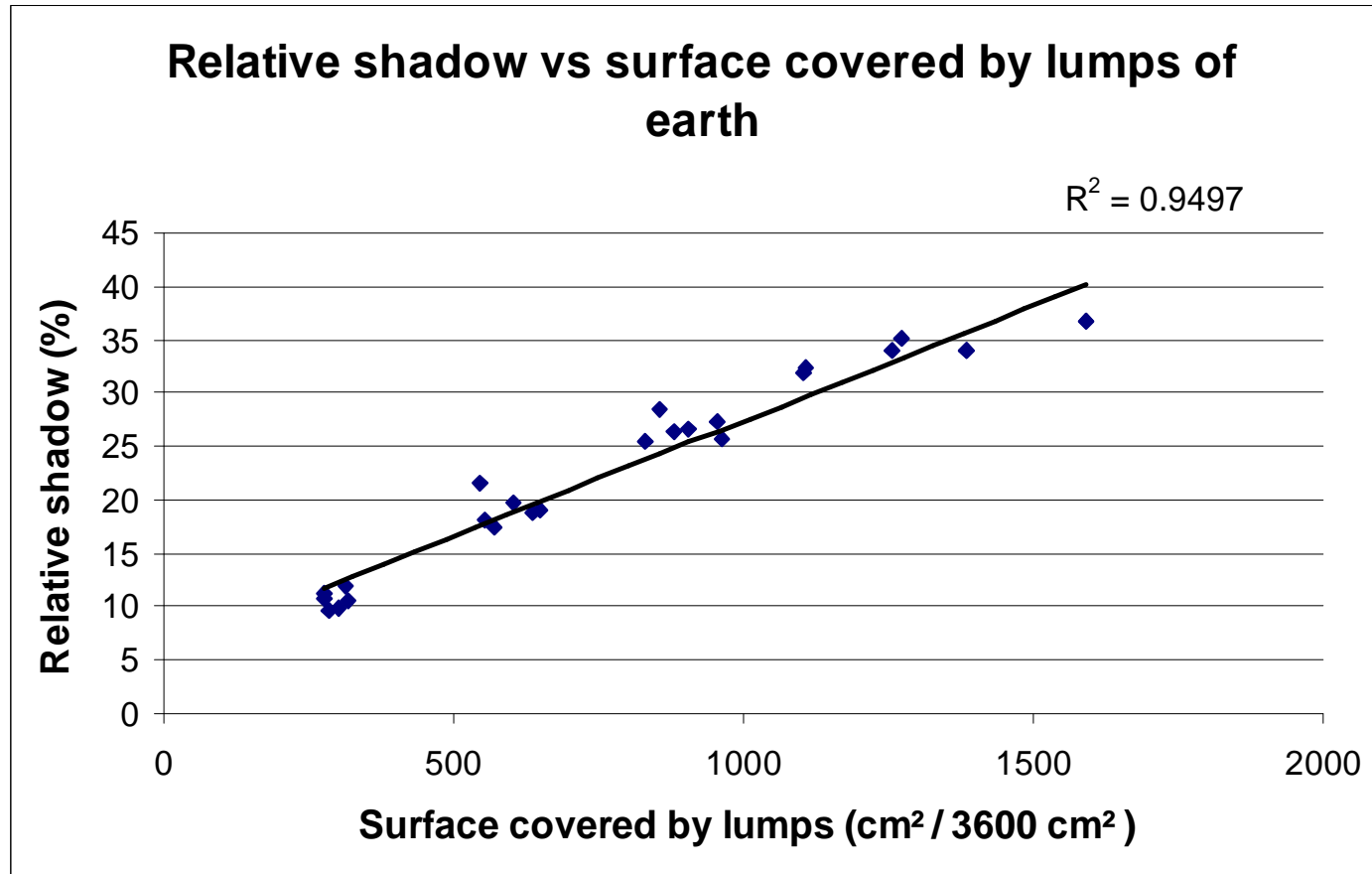
System illuminated by 500W spotlight

→ Roughness measurements (standard deviation on 400 nails) + soil shadow assessment





Results and discussion





Results and discussion

- There is no clear relation between shadow and roughness
- Relative shadow is much better correlated with the surface of lumps of earth than with roughness



Conclusion and perspectives

- The shadow strongly influences the soil reflectance
 - Field campaign in condition of low shadow
 - Study the shadow – soil reflectance relationship in the IR and NIR

- The soil shadow is highly correlated to the surface covered by the lumps of earth
 - establish an empirical classification of soil shadow in function of the tillage and the soil texture



Thank you...