20.8.2013 16:40

**Discussion notes, talk by Jouni Peltoniemi, “Polarisation of vegetation”**

* WM: vegetation (leafs) orientation by the Sun, affects the statistics in the measurements
* KM: targets should be characterized well
* JP: model should have enough parameters and parameters taking into account the target heterogeneity
* PL: spectral information is important
* AC: vegetation may be different in the morning with the moisture
* WM: even simplified and controlled laboratory measurements of natural (vegetation) targets are complicated
* FS: Crop diseases should be measured, either spectrally or with polarimetry
* MM: Chlorophyll content will decrease with crop disease, that can be observed spectrally

**Discussion notes, ”Bridging a theory and experiments: what has to be done to make it better?”**

* FS: could SAEMPL be more generic and replace/merge with the Amsterdam/Granada database
* KM: Goal to show that there are no single bulk refractive index in nature
* All: need for ensemble average
* KM: in flow particle cytometer you will lose material, SAEMPL should not lose particles
* FS: One particle is quite small sample, also signal to noise will be very bad
* KM: target with SAEMPL start from single scattering, but will move to layer of particles
* WM: also difficult to build targets knowing what they are
* WM: should SAEMPL be modular and should it be started from a simpler target
* FS: signal-to-noise ratios should be computed before buying all the stuff
* WM: particle levitation could be option, large voltages will be involved
* KM: levitation problem 20 years ago – several particles levitating at the same time
* WM and FS: can be solved – WM has a colleague doing levitation
* FS: could SAEMPL start with levitation
* KM: yes, maybe at first
* AP: no monochromator with flow cytometer, will not work, we need broadband source for that
* WM: visit Univ. Herfordshire
* KM: plans to visit Jurgen Blom in Germany
* KM: what would be the best detector to be used, 180 angles, spectra from visual to near-UV
* WM: we had astronomical fiber spectrometry build by student
* WM and FS: commercial detectors (fiber spectrometry) available
* FS: only three-four groups doing experimental spectropolarimetry in Europe
* KM: should we build an EU-network?
* EZ: BASF did optical research, also other groups in commercial side
* WM: commercial labs should make money, their expertise is in areas where businesses have made money
* WM: what’s the next step with experimental lab work
* FS: we should just advertise more
* WM: how are the presentations given in the meeting distributed
* MG: website, program is in the web…
* JP: can somebody measure in-between sizes, between FIGIFIGO and small particles
* WM: we can help with particles smaller than 5 mm
* AC: where are polarimeters in space missions
* KM: targets need more precise characterization when they are measured
* JP: specific professionals must be involved to make such target characterization
* EZ: wide-audience book by all of us can be written on polarimetry. The book should summarize the techniques of remote sensing with polarimetry that we use; whereas, the specific details related to our fields of research should be excluded. There are many compilation books that include interdisciplinary articles on light scattering. However, the authors are typically focused on their applications giving rather little attention to the techniques. This diverts scientists working in other fields. Chapters in interdisciplinary books are only cited by scientists working in the same field. One can easily check this with scopus. The book, how I see it, should be a mono disciplinary one, providing recipes which are valid in various circumstances. For instance, it may include chapters as follows: ‘How one can retrieve reflectance in micron-sized particles from polarimetric measurements’ or ‘How one can discriminate dielectric and conductive dust particles with polarimetric measurements’