Scientific measurement disparities in imaging spectroscopy of terrestrial ecosystems | ISSI Forum 11–13 June 2024

Tuesday 11.06.2024

09:30 – 09:45	Welcome Note (ISSI)
09:45 – 10:15	How this forum was borne and its objective (convenors)
10:15 – 10:30	Short Coffee Break

10:30 - 12:30 Current approach on assessing uncertainties and outstanding key questions how to get from electronic counts to L1C / L2 (12' each +3' Q and A) (chair: J. Gorroño):

- NPL (Uncertainty propagation) S. Hunt / J. Nightingale
- Universidad Politecnica de Valencia (Uncertainty Sentinel 2) J. Gorroño
- ESA (Uncertainty approach for ESA's Optical Missions) K. Alonso / J. Gorroño
- ACRI (Sentinel 3 operational uncertainty product generation) L. Bourg / N. Lamquin
- NASA (SBG/EMIT and AVIRIS-NG series) D. Thompson
- DLR Lessons learned from inter-comparison of multi- and hyper-spectral L2A BOA surface. R. de los Reyes

12:30 – 14:00	Lunch

14:00 – 16:00 Current approach on handling uncertainties and outstanding key questions continued (12' each +3' Q and A) (chair: R. De los Reyes):

- CSIRO (Users perspective on disparities for multi-scale applications) C. Ong
- Uni Reading (How to build an Uncertainty Tree diagramme) J. Mittaz (online)
- University of Tokyo (Calibration & Commissioning – HISUI & GOSAT) T. Kawashima
- CNR Lessons learned from PRISMA (M. Pepe/C. Giardino)
- GFZ (Lessons learned of EnMAP) S. Chabrillat
- University Zürich (Uncertainty information of APEX and other airborne Imaging Spectrometers) A. Hueni
- DLR EUFAR) M. Bachman

16:00 – 16:30	Coffee break

16:30 – 18:00 Open discussion on needs/requirements for harmonising the way uncertainties are handled (from L0 to L2A Bottom of Atmosphere reflectance) (chair: J. Nieke)

- FLEX uncertainties for L0 – L2 (J. Moreno, online)
- Seed questions for open discussion:
  - What are common definitions of measurement disparities?
  - How to remove disparities?
  - What to do with differences appearing during intercomparison/harmonisation exercises?
  - Shall we use Reference Missions Data Sets / Anchor points?
  - What are the Advantages/Disadvantages?
  - How to agree on Reference Missions Data Sets / Anchor points (spectrum L1/L2 or also intermediate anchor points)?
  - How to work with a Reference Mission Data Sets / Anchor points?

19:00	Icebreaker

Wednesday 12.06.2024

08:30 – 10:30	L2A User needs: Why we spend time on Intercomparison initiatives (12' each +3' Q and A) (chair: J. Adams)

- Cal/Val from in - situ to L2 (A. Bialek)
- ACIX – III (K. Alonso/D. Thompson (tbc))
- SRIX4Veg (C. Ong)
- Sen2like (F. Gascon, online)
- RAMI (J. Adams)
- Discussion:
  - Auxiliary Data (e.g. cloud mask, DEM, solar spectrum)

10:30 – 11:00	Coffee break

11:00 – 12:30	Pre-flight and Mission Planning Cal/Val (12' each +3' Q and A) (chair K. Thome)

- Pre-flight calibration and uncertainties (D. Thompson)
- Anchor point (A. Hueni)
- Reference Mission Data (Metrology) (S. Hunt)

Group discussion on needs and requirements for missions, including considerations of QA4EO principles, FRMs, SI traceability

12:30 – 14:00	Lunch

14:00 – 16:00	Commissioning and operational CalVal (12' each + 3' Q and A) (chair C. Ong)

- Reference Data (K. Thome)
- In-flight (Experience and challenges regarding vicarious calibration of spaceborne imaging spectrometers - examples from the DESIS mission) (M. Bachman)
- Inter- / cross calibration (R. Kokaly)
- CAL/VAL during commissioning of EnMap (M. Brell)
- Discussion to focus on the "what, which, how", leading to recommendations for a pathway towards guidelines on good practice for
  - In-flight calibration and validation
  - Reference Data

16:00 – 16:30	Coffee break

16:30 – 18:00	Mediated summary and group discussion on needs and roadmap First round on planned white paper / roadmap (grand science questions, priorities, strategic needs, collaborations/coordination) (convenors and all)

19:00	ISSI hosted Dinner

Thursday 13.06.2024

09:00 – 10:30	Seed presentation (R. De Los Reyes, J. Adams and M. Werfeli) Discussion White paper content (all) • Set perimeter of white paper
10:30 – 11:00	Coffee break
11:00 – 12:30	Discussion White paper content continued (all) • Assign individual chapters
12:30 – 13:30	Lunch
13:30 – 15:00	Example for combining sensor observations (including propagating uncertainties) (J. Gorroño) White paper writing assignments / discussion on the way forward (all)
15:00 – 15:30	Concluding Notes and Future prospects (all convenors)
15:30	Adjourn