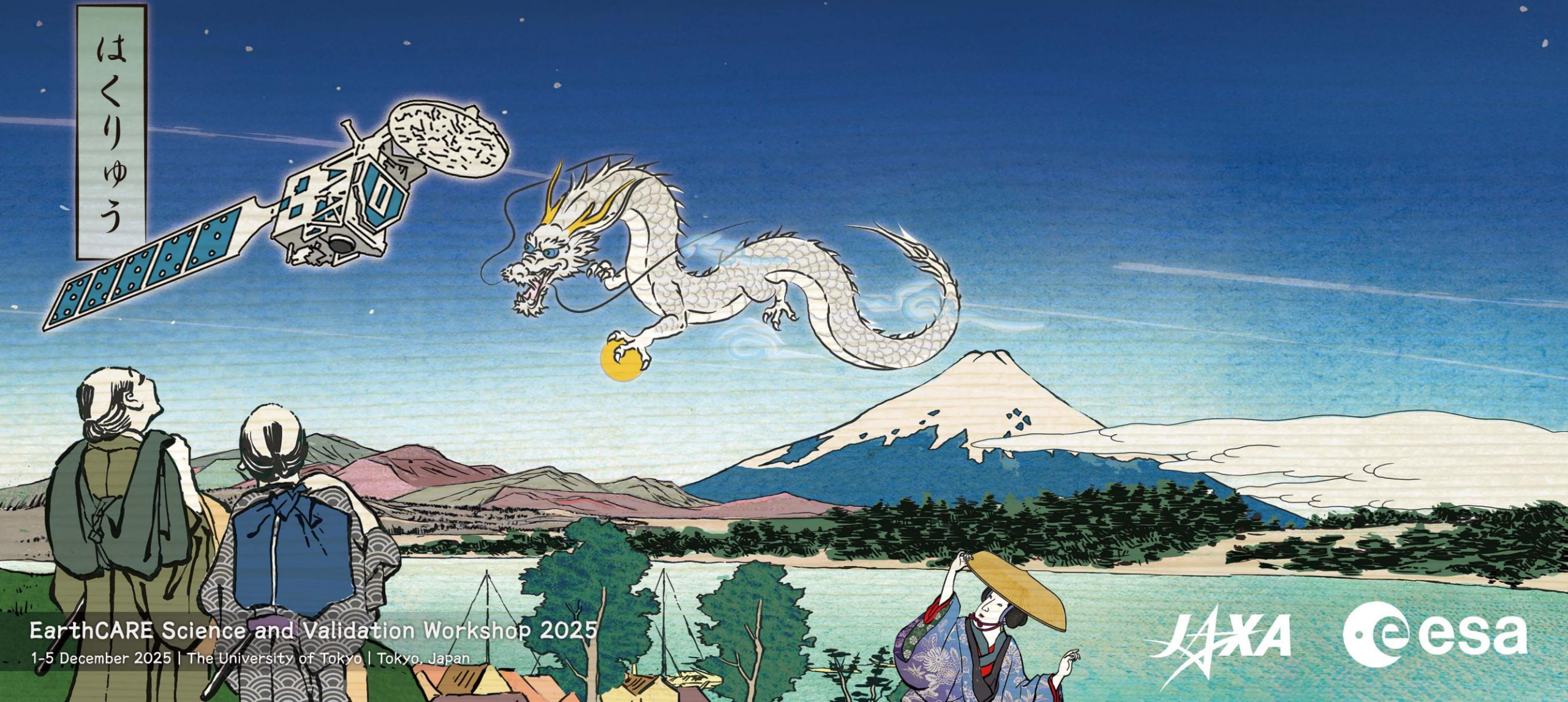Aerosols: Validation Discussion and Recommendations

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- ## Overview
  - ### There are now enough discrete comparisons that patterns have become clear.
    - E.g. L1 Depolarization issues.
    - Classification issues e.g. Cirrus ⬅➡ Dust confusion.
    - Different Baselines have been compared with validation data and generally confirm improvements!
- ## L2 products
  - ### A-FM
    - Overfilling of some regions (e.g. in and around inhomogeneous ice clouds).
      - A-FM can perhaps benefit from interaction with ATLAS approach.
    - Performance in stratosphere should be improved.
  - ### A-AER/A-EBD
    - MS approaches are starting to be evaluated.
      - Only a few cases so far.
        - More cases need!
          - E.g. Semi-transparent "nice" cirrus layers

Aerosols: Validation Discussion and Recommendations (II)

- **A-TC**
  - Aerosol/Cloud discrimination likely still needs improvement.
    - More cases in difficult conditions would be helpful
      - E.g. Broken thick BL clouds
      - Situations where ice and aerosol do really co-exist.
      - Florescence lidar observations could help.
  - Beter QA flags to enable "removal" of uncertain detections needed
    - Elimination of high- and med- classification outputs?
      - Esp. Changing classes for aerosols is creating confusion for users and not really adding value.

- **ATL_CLA (JAXA L2a)**
  - Target mask for optically thin aerosols should be improved.
  - More validation using ground-based lidars is welcome.

- **MSI-AOT**
  - Missing aerosol retrievals near coastlines and water bodies.
    - Problems with accurate BRDFs in such (shallow-water) conditions ?

- Other points.
  - We did not see many(any?) comparisons with aerosol in-situ sensors
    - Potentially valuable as they could provide real microphysical properties.
      - Are more measurements needed, or are they just not ready yet ?