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Towards Integrated Cloud Mask and Quality Control for ABI SST Product: Prototyping with MSG SEVIRI

N. Shabanov, A. Ignatov**,** B. Petrenko, Y. Kihai and A. Heidinger

- **Objectives**
  - ABI CM is the upstream cloud masking system designed for clear-sky identification for downstream ABI applications
  - SST QC is a quality control module inside ABI SST system, designed to asses SST retrievals accuracy contaminated by environmental conditions (ambient clouds, aerosols, radiometric noise, etc)
  - The objective of this research is to intercompare performance and assess integration possibility of ABI CM and SST QC

- **Methods**
  - Side-by-side comparison of ABI CM and SST QC
  - ABI CM vs. SST QC Confusion Matrix analysis
  - Analysis of performance of individual ABI CM and SST QC tests

- **Results**
  - ABI CM performs according to ATBD specs (<~12% misclassification compared to SST QC)
  - However, to achieve fine SST accuracy ABI CM mask needs to be further refined with SST QC (run sequentially)
  - For the SST applications (1) use only thermal channel-based tests to avoid temporal/spatial discontinuity; (2) adjust ABI CM uniformity filters to minimize 'False Cloudy' misclassification and allow sequential execution (ABI CM -> SST QC); (3) Fine tune SST QC and match SST retrieval algorithm.