SCIAMACHY Quality Working Group (SQWG-3):

Status of Action Items

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Answers (1)

- **AI-MTR-2 (IUP/DLR):**
  Check if the drifts/biases in the limb O3 data are better for scientific algorithms and if they could be used to improve the operational algorithm.

- **IUP answer:**
  With the new IUP SCIAMACHY ozone retrieval version 3.5 no detectable drifts with respect to MLS are observed.
  However up to now only data from (inclusive) 2006 to 2011 are processed.
  After the entire data set has been processed a drift evaluation for V3.5 will be performed.
  Assuming the problem is fixed the following solutions to improve the operational data set are available:

  1. A look-up table of drift corrections might be created
  2. The new retrieval method can be "downgraded" for a suitability for operational processing (substantial decrease in the computed wavelength sampling is needed). This option must be supported by an extensive feasibility study and requires substantial additional funding.

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Answers (2)

- **AI-MTR-14 (IUP/SN,NR):**
  Provide differences between tropospheric O_3 and tropospheric NO_2 algorithms to DLR.

- **IUP answer:**
  Main differences are:
  1. Tropospheric NO_2 uses offset correction (pacific region) derived from model data (not required for O_3)
  2. Tropospheric NO_2 is based on slant columns and requires AMFs to convert to total columns (not needed for O_3)
  3. Tropospheric NO_2 uses only descending parts of orbits to avoid photochemical correction (not required for O_3)
  4. Some small differences in actual matching schemes and determination of tropopause height (probably negligible)

  Quick test to use NO_2 algorithm for O_3 could be performed by switching off steps 1 & 2 (possible in operational s/w?); then compare with IUP results.

  A clean solution would require a full operational implementation and then verification/validation

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Open AIs

PM#-	AI#	Actionee	Action	Due Date	Comment
AI-PM4-	10	BIRA	Value of ozone drift (1.5%) needs to be checked		
AI-PM5-	1	IUP & BIRA	Check if it is required to extend the current verification data set to include new products (limb clouds, tropospheric BrO, nadir CH4) and to consider their validation in the context of the CCN		No extension required for limb clouds; nadir CH4 is already considered.
AI-PM5-	4	DLR	Check if complete geolocation information for moon measurements (as for limb) can be included in the new L1 products.		
AI-MTR-	2	IUP/DLR	Check if the drifts/biases in the limb O3 data are better for scientific algorithms and if they could be used to improve the operational algorithm.		
AI-MTR-	3	DLR	Check the behaviour of the operational tropospheric BrO algorithm with TOMS albedo values.		
AI-MTR-	4	ESA (GB)	Check how additional SOST information can best be stored and made available.		
AI-MTR-	5	ESA	Check with responsible for ESA archive to send list of ESA documents to DLR.		
AI-MTR-	10	SRON	Provide the necessary input on key data errors etc. to DLR.	March	
AI-MTR-	11	DLR	Provide a list of considered and not considered errors and a reference to the related formulas used for error propagation for every product to SQWG as starting point for further discussions.	June, before PM6	
AI-MTR-	14	IUP (SN,NR)	Provide differences between tropospheric O3 and tropospheric NO2 algorithms to DLR.		

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