



NIWA

Taihoru Nukurangi



Update on the ozonesonde data product

Richard Querel

Lauder Atmospheric Research Station

Climate, Freshwater & Ocean Science



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Overview

- What has happened so far?
- What is in progress?
- What are the next steps?

Recent background (and future)

- September 2016 – O3S-DQA (Ozonesonde Data Quality Assessment) meeting
- May 2017 – Ozonesonde technical document submitted to reviewers (authors: Jacquie Witte, Greg Bodeker, Anne Thompson, Richard Querel)
- 2018 – Greg stepped down from GRUAN
- 2018 – Feedback on O3S TD received from 3 reviewers
- September 2018 – ASOPOS-2 experts meeting (Assessment of Standard Operating Procedures for Ozone Sondes). Richard Querel discussed GRUAN ozonesonde product development with Holger Vömel, agreed to be involved.
- April 2019 – Jacquie left NASA/SHADOZ, to NCAR, no longer involved with O3S
- May 2019 – now
- September 2019 – Next ASOPOS-2 meeting.
- October 2020 – O3S meeting associated to QOS2020

In progress by O3S expert community

- Within ASOPOS-2 expert group:
 - Uniformity of submitted metadata: mandatory vs optional
 - Practical guidelines for reporting overall uncertainty in O3S archives
 - Incorporating results from JOSIE-2017
 - Looking at the major sources of uncertainties
 - Need for updated ozonesonde SOPs
 - Investigating whether we need new solutions
 - Better characterising pump-flow efficiencies (correction factor?)
 - Stabilising box temperatures
 - Deeper look at background current

In progress by O3S community

- O3S experts community are defining required meta-data as well as standard definitions of parameters and best practice SOPs
- The ASOPOS-2 meta-data list (by Holger & Jacquie) has been compared with the list of parameters being collected by the GRUAN RsLaunchClient.
- Several O3S data sets have been homogenised; papers published
- NDACC working on data versioning & DOIs
- O3S community discussing generating/submitting near-real-time data in GEOMS-HDF format for easier assimilation by satellite validation users (with Ian Boyd, AVDC)
- Why not use CF-1.6 metadata convention?

Next steps for GRUAN O3S work

- Important point: GRUAN is not leading O3S development. We must work with the O3S experts and let them do their work. Revisit after next ASOPOS-2 meeting.
- GAW 201, Smit et al. 2001 (Quality Assurance and Quality Control for Ozone Sonde Measurements in GAW) is heavily cited in the TD. Why do we need to re-write source material into GRUAN-speak? Cite reference materials and keep the technical documents concise. Who will read these large documents? 70-100 pgs
- Current O3S GRUAN Technical Document is too big, covers too many topics (i.e. no need to go into homogenisation or back-processing, etc.).
Need to split current document and streamline content.

Next steps for GRUAN O3S work

- **ACTION:** Make sure GRUAN is collecting the recommended O3S meta-data. Start now and harmonise terminology where ambiguous.
- **ACTION:** Devise QA/QC tests for the GRUAN ozonesonde central processing software to properly flag erroneous data (most sites do this step manually....)
- **ACTION:** Define a manufacturer independent ground-check for ozonesondes, i.e. measure a known 100ppb source.

Thank you

Richard Querel

+64 3 440 0400

richard.querel@niwa.co.nz

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