

Interactive comment on “Automatic procedures for submitting essential climate variables (ECVs) recorded at Italian Atmospheric Observatories to WMO/GAW data centers” by Luca Naitza et al.

Anonymous Referee #1

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The manuscript by Naitza et al. describes an automated data transmission and quality control system for a set of measurements from a set of Italian atmospheric composition monitoring stations. While this is clearly a relevant topic and I applaud the team members for having this accomplished and implemented, I don't see the manuscript worthy of publication in a peer-reviewed journal as it looks much more like a technical report. The topics of automated data processing, automated QA and flagging have been dealt with for many years, and many environmental agencies have produced heavy manuals with detailed discussion of procedures. Also WMO, which is mentioned several times in the manuscript, has produced a lot of material on such matters and operational weather centers are relying on automated procedures for daily

weather forecasts. There are practically no references to any of these long-standing activities and it is rather unclear what the novel aspects of the approach described in this manuscript are.

Although I know that automated and formalized workflows are still a rare commodity in atmospheric composition science (in contrast to operational air quality monitoring), and the authors of this article are therefore among the first to develop and implement such procedures consistently throughout a set of essential climate variables, this doesn't justify the lack of any deeper analysis or discussion of the procedures. To give just one example: if range checks are performed on different atmospheric variables with different frequency distributions: how are the thresholds determined and how robust are the error detection procedures in each case? Clearly, finding outliers in, for example, NO data is very different from finding outliers in ozone, CO₂, or CH₄ data.

Also on the technical and data management side the paper lacks much important information, for example related to the documentation of responsibilities, resilience of the data transfer, provenance tracking and versioning.

In its present form this paper should only be published as technical report at one of the institution's web site. It would have to be completely rewritten to merit publication in a scientific journal - even if this journal has a more technical scope.

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Discussion paper

