

Manuscript: 20 years evolution for the DORIS permanent network, from its initial deployment to its renovation
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Comments from Editor: Pascal Willis

p. 3 in the introduction, you may want to mention the major scientific applications of the DORIS (precise orbit determination, real-time geodesy and geodphysics) and provide a few references, providing citation from different groups. See some suggestions on IDS Web page: http://ids.cls.fr/html/report/peer-reviewed_journals.html. These would provide a better background to the readers.

***See new, introductory paragraph.
Rather than drawing a couple of references from this several dozen publication list, I have cited a paper in the same issue that gives a general description of the system, and whose reference list will provide further information to the interested reader.***

p. 4 sea level change studies. For the same reasons, please provide proper references on this topic as well. Here are some suggestions:

Douglas BC (1991) Global sea level rise. J Geophys Res Oceans 96(C4):6981-6992.

Peltier WR, Tushingham AM (1989) Global sea-level rise and the greenhouse effect, Might they be connected? Science 244(4906):806-810.

Cazenave A, Dominh K, Ponchaut F, Soudarin L, Cretaux JF, Le Provost C (1999) Sea level changes from TOPEX-Poseidon altimetry and tide gauges, and vertical crustal motions from DORIS. Geophys Res Lett 26(14):2077-2080.

Cazenave A, Nerem RS (2004) Present-day sea level change, Observations and causes. Rev Geophys 42(3): art. RG3001.

Only Cazenave et al. 1999 was retained, since it is the one most related to DORIS, and the only one I knew of.

p. 8 is CEIS an acronym? Explicit

It is the name of the company. It might be an acronym, but my question to CNES about its meaning remained unanswered. I might be able to dig this out, but I think it is of very little interest to the readers.

p. 9 weather station. You may want to add for completeness that most groups if not all choose not to use these corrections but to estimate these corrections from the data themselves. Here is a recent articles summarizing the capability of the DORIS system to monitor the tropospheric correction:

Snajdrova K, Boehm J, Willis P, Haas R, Schuh H (2006) Multi-technique comparison of tropospheric zenith delays derived during the CONT02 campaign. J Geod 79(10-11):613-623, DOI: 10.1007/s00190-005-0010-z

OK. Information about the precision of the different met sensor generations was also added, following the request from two reviewers.

p. 10 the “expected 10 cm accuracy” never existed except in the very first simulations before the system existed. The first results showed sub-decimeter level accuracy very rapidly. Please confirm.

I’m not that sure. Cazenave et al. (1991) “Positioning results with DORIS on SPOT2 after first year of mission” show (Table 3) absolute positioning differences with IERS much larger than 10 cm, and (Fig. 8) repeatability also larger than 10 cm. I have nevertheless added a few words.

p.11 is SOREP an acronym?

Same reply as about “CEIS”.

p. 19 Sorsdal results. An article on this exact topic was considered for the Special Issue from Jean-Jacques Valette. You may want to contact him and ask about the exact status of his manuscript, and eventually cite it in your own paper.

This article was not submitted.

p. 20 high altitude satellite → higher altitude satellite

see new wording, taking Tavernier’s reply into account

p. 26 centring or centering?
(check all occurrences)

centring. I have decided to write my paper in UK English, and set my spell checker accordingly, so the wording should be homogeneous throughout the whole text.

p. 27 Le bail submitted. For your information and for completeness, there is also another paper on a similar topic in the same issue

Williams SDP, Willis P (submitted) DORIS network, error analysis of weekly station coordinates. J Geod, same issue.

Thanks, but I haven’t read it so I’m not very keen on citing it.

p. 27 machined or engineered?

Machined. To machine = “fabriquer” or “usiner” in French.

p. 34 main reason ... significant failure rate. Some other causes may also have large impact (maneuvers, absence of distribution of data by CNES for several months at start at observation, satellite or telemetry failure, loss or almost all 1990-1992 data, etc.). Please confirm, even if you don't need a detailed analysis in the document, assumption must be verified.

See added sentence.

p. 41 1 figure per page is easier for the publisher (Springer-Verlag)

This will be done at the final stage. Grouping several pictures per page allow the reviewers to print a more compact document.

p. 41 and others. There are probably too many figures. You may want to select 2 or 3 most meaningful examples in the article and add another electronic supplement to put the rest of them.

Two figures have been removed, but all other have been retained. Please note that one reviewer asked for two more maps (which I have not added), and that another one made the following general comment on the paper: "Although the paper is somewhat lengthy, none of the information seems to be superfluous"

p. 47 Figures 29, 30 and 33 to 35 may not be needed in the article. Same for 37

29 (now 27): as several IDS experiments have been presented, readers may want to be able to locate them on a map.

30 (now 28): shows in a graphical way where SIMB is located in the communication flow. Other reviewers seem happy with it.

33 (now 31): one reviewer asked that more information be added on this sketch. Another one asked that a table, giving the phase centre and ref point heights be added.

34 (now 32) and 35 (now 33): I found it interesting (and several reviewers seem to agree) to show how the GPS survey of DORIS antennas is carried out.

37 (now 35): this is a quick way for the reader to see all stations where several antenna positions have existed. Otherwise, the reader will have to dig this out of the 3-page occupation list in the ESM.

p. 52 could figures 39 and 40 be combined?

Yes, but this would result in far less readable information: if I put all station names, the map will be very dense and hard to read. If I don't put the station names for the current stations, the paper will lack a map showing the coverage of the current network.

p. 53 Mention electronic supplement in legend.

No: the spreadsheet in the ESM refers to the second stability evaluation, dealt

with in section 10.4, whereas Table 1 lists the criteria used in the first assessment, dealt with in section 7.1.

p. 54 collocation table. You may want to add the epoch when this list was established.

See Note added at the end of the file.