

3.3 Analysis Coordinator

Overview of responsibilities

As the new Analysis Coordinator (AC), appointed in October 2010, I see my role in the IERS as one of coordination of the efforts of the analysis centers of the IERS to ensure that the IERS continues to provide the highest possible quality Earth orientation parameters and associated materials to the community. The role of the AC from the IERS Terms of Reference is: *“The AC is responsible for the long-term and internal consistency of the IERS reference frames and other products. He is responsible for ensuring the appropriate combination of the Technique Center (TC) products into the single set of official IERS products and the archiving of the products at the Central Bureau or elsewhere.”* This core responsibility should be modified somewhat to reflect the role of the IERS Product Centers (PC) as well as the Technique Centers. My first task as AC would be to pose my role as: *“The responsibility of the AC is to monitor the TC and PC activities to ensure that the IERS objectives are carried out. This is accomplished through direct contact with the independent TC Analysis Coordinators or equivalent. Specific expectations include quality control, performance evaluation, and continued development of appropriate analysis methods and standards.”*

To achieve the responsibilities as AC, some specific tasks to be undertaken are:

- 1) Coordinate and stimulate the generation of a palette of combined and consistent IERS products of different latencies,
- 2) Improve the consistency of the techniques among each other and the synergies (e.g. reduction of technique-specific biases, common parameterization, adherence to standards, etc)

To achieve these tasks, my plan is to

- 1) Work closely together with the Analysis Coordinators of the individual techniques (e.g., common meetings between the ACs)
- 2) Chair of the working group on Parameterization/Modeling of ITRF20xx/IERS20xx to be established (decision at the last IERS DB Meeting).
- 3) Serve on “ITRF datum evaluation” Working group established by IAG Commission 1. (Xavier Collilieux, Chair).
- 4) Support GGOS in organizing the biannual Unified Analysis Workshop (UAW).

Analysis of the IERS core products

Some of my initial thoughts on the IERS core products and how they should evolve include the IERS product quality. How are the products used? And the procedures used to generate current products with emphasis on use of SINEX and combined results from Technique Centers. Other questions that can be addressed are: Should IERS generate a Center of Mass product? How do we evaluate the ITRF? Do we have the needed blend of latency and accuracy of products? Further analysis of the parameterization of earth orientation parameters can be considered. Should we generate higher time resolution products on a regular basis? Is the current offset and rate parameterization adequate or should we consider piecewise linear models? With the current accuracies of GPS orbit determinations and the potential leakage of diurnal and semidiurnal signals into the (semidiurnal) GPS orbits, the current diurnal and semidiurnal models of both EOP and loading should be evaluated.

The AC will also look at the IERS product centers as well. There are currently two ITRF Product Centers and there have been some complications associated with how these two centers interact. I would be useful if the IERS had additional ITRF product centers and a means to allow other centers to become involved in the IERS. It could be possible to allow less stringent ITRF product centers that allow for EOP variations in their ITRF/ICRF generation but not explicitly compute all the covariance between all EOP and ITRF parameters. This less stringent approach would allow Kalman and square-root-information filters to be used that can generate all the EOPS in a smoothing filter but cannot easily compute all the covariances between all the EOP parameters.

The IERS Global Geophysical Fluid Center has been recently updated with many new loading and atmospheric products to be delivered and I will work closely with the product center to ensure we have high quality products.

I see many challenges in the coming years to ensure that the IERS continues to maintain its very high standards and products. I would like to thank the outgoing AC, Markus Rothacher, for leaving the analysis state of the IERS in such very good condition.

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