

## Topical Discussion Meeting Report

Name of the meeting: International Meridian Circle Project (TDM 12)

Conveners: Frédéric Pitout, (IRAP, Toulouse, France) and Aziza Bounhir (University Mohammed V, Rabat, Morocco)

Secretary: Babatunde Rabiou (ARCSSTE-E, Ile Ife, Nigeria)

Date - time room: 23 November 2023 - 11:45-12:45 CET - Saint Exupéry

Nr of participants: ~15

Form of TDM: Service/Project feedback

### Objectives of the TDM

Solar activity, space weather, extreme meteorological events, global warming, earthquakes, geomagnetic field secular variations all leave their imprint on the lower ionosphere and thermosphere (LIT), this complex interface where neutral atmosphere and space environment interact. The objective of the "International Meridian Circle Program (IMCP)", a proposal for an international collaboration program initially formulated by the Chinese Academy of Sciences, is to use the LIT as a screen on which to detect and separate these specific imprints, including their variations in magnetic and geographic latitude, local time and longitude; in the IMCP concept (Liu et al., 2021), this objective can be achieved by networking solar and upper atmosphere observation instruments along two Great Meridian Circles in longitude quadrature: an Asia-Americas meridian circle (120°E-60°W), and a Europe-Africa-Pacific one (30°E-150°W). In this TDM, we invited the ESWW community to openly discuss:

- 1) the science base of this project and its specific strengths and weaknesses;
- 2) ways for the European and African communities to contribute together to this project via networking of instruments along the 30°E-150°W Great Meridian;
- 3) the cooperative research tools needed to stimulate joint analysis of IMCP data.

### Discussion highlights

This Topical Discussion Meeting consisted of a series of presentations and discussions on the following topics:

- Introduction by Frédéric Pitout (IRAP, France)
- The Chinese Meridian Project as a "template" for the IMCP, by William Liu (NSSC, CAS, Beijing), given by Michel Blanc (IRAP, France)
- IMCP- Europe Africa - science objectives, instrumentation, and networking, by Michel Blanc
- The example of space weather research in Morocco, by Aziza Bounhir
- Space Weather in Africa and participation to IMCP, by Babatunde Rabiou
- Possible interactions between IMCAP and E-SWAN, by Luca Spogli (INGV, Rome, Italy)
- IMCP synergies with ISWI, by Christine Mazaudier (LPP, Paris, France)
- Q/A with the audience.
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### Main conclusion of the meeting

The audience acknowledged the program's benefits. Discussions about the archiving and dissemination of all the data were initiated. We confirmed that all data would be public and

freely accessible. Also, the role of ISWI in coordinating efforts and possibly providing instruments was highlighted. The director of E-SWAN, Luca Spogli, has assured us of his support, which is very encouraging. It was decided that regular on-line meetings should be organised to gather potential interested colleagues in Europe and Africa and discuss the way forward.

### **Annexe**

Liu W., M. Blanc, E. Donovan, J. Foster, M. Lester, H. Opgenoorth, L. Ren (2021), Science Objectives and Observation System for the International Meridian Circle, Science China, 2021. <https://doi.org/10.1007/s11430-021-9841-8>