The International Meridian Circles Program: a major international cooperation project

within ISWI

ISWI Steering Committee Meeting Feb. 5-6, 2024 Michel Blanc^(1,2)

(michel.blanc@irap.omp.eu), Babatunde Rabiu ⁽³⁾, Aziza Bounhir ⁽⁴⁾, Frédéric Pitout ⁽¹⁾, Olivier le Lecontel ⁽⁵⁾ Christine Amory-Mazaudier ⁽⁵⁾, all members of GIRGEA and the Team of IMCP Chief Scientists: Chi Wang ⁽²⁾, William Liu ⁽²⁾, Xuhui Shen ⁽²⁾, Jian Wu ⁽⁶⁾, Qinghe Zhang ⁽⁷⁾, Shun-Rong Zhang ⁽⁸⁾

(1)IRAP, Toulouse, France; (2)NSSC, CAS, Beijing; (3)UN-ARCSSTE-E, Nigeria; (4)
University of Rabat, Morocco; (5)LPP,
France; (6)CRIRP, China; (7)Shandong
University, China; (8)MIT Haystack
Observatory, USA

What We Want to Build: TWO GREAT CIRCLES, FOUR PILLARS

2 - INSTRUMENTS & NETWORKS

Monitor the Solar-Terrestrial chain & the "IMUA Screen"

3 - DATA

On-line repositories
Accessible to IMCP users

1 - SCIENCE

FORMULATE SCIENTIFIC QUESTIONS
&
ADDRESS USERS NEEDS

Virtuous circle of knowledge building

4 - INTERNATIONAL COLLABORATION

On-line tools & International Teams
UNDER THE UMBRELLA OF ISWI

IMCP BENEFITS

NEW SCIENTIFIC INSIGHTS

CUTTING-EDGE MONITORING CAPACITIES

ADVANCED FORECASTING METHODS

OTHER DATA: GROUND-BASED, SPACE

THEORY MODELLING

AI TOOLS

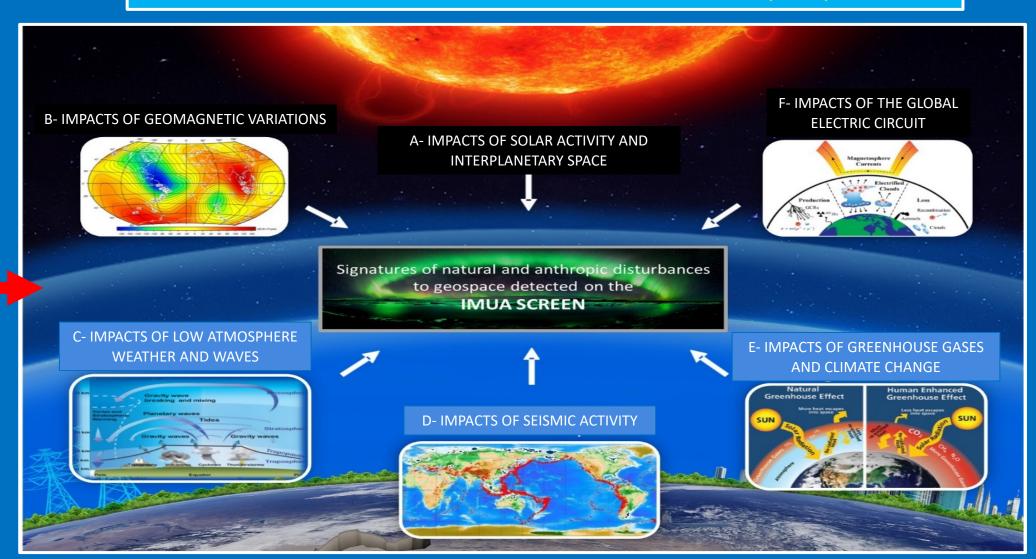
1. IMCP SCIENCE

ONE OVERACHING SCIENCE GOAL

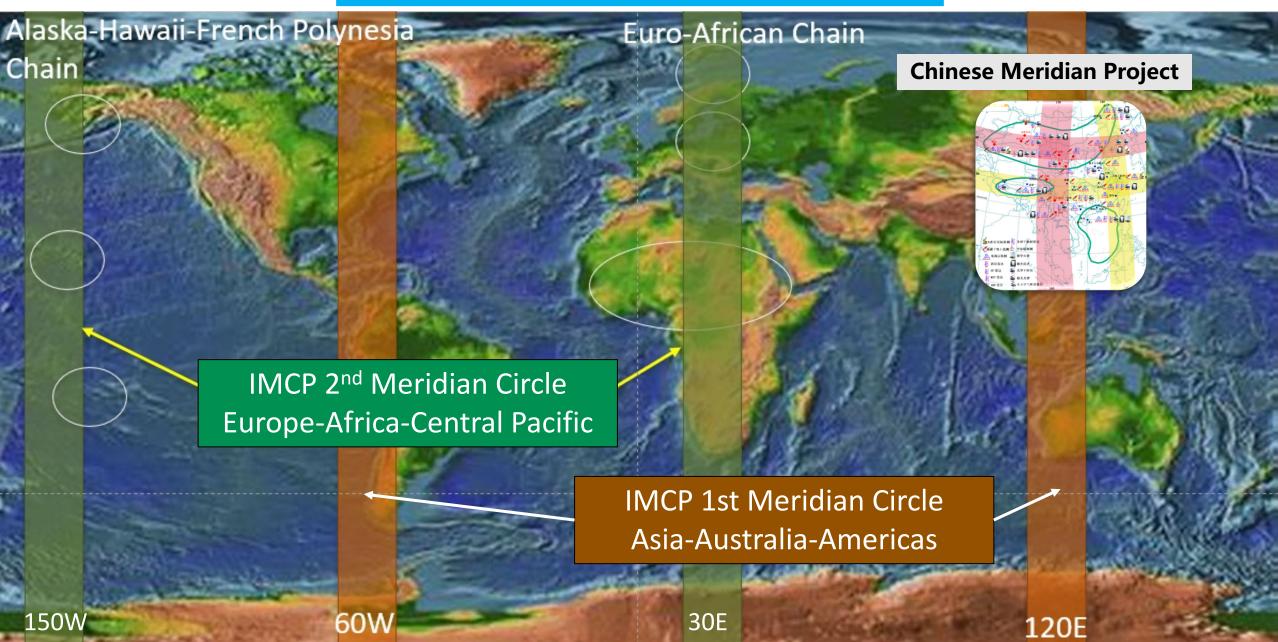
STUDY, MONITOR AND POSSIBLY FORECAST

THE IMPACTS OF NATURAL AND ANTHROPIC DISTURBANCES ON THE IONOSPHERE AND MIDDLE-UPPER ATMOSPHERE (IMUA)

SIX MAJOR SCIENCE THEMES



2. IMCP INSTRUMENTS AND NETWORKS TWO GREAT CIRCLES OVER 6 CONTINENTS



BUILDING THE EUROPE-AFRICA-PACIFIC GREAT CIRCLE





Mai MOROCCO Exoplanet search

OWL@Oukaimeden

Near Earth space monitoring

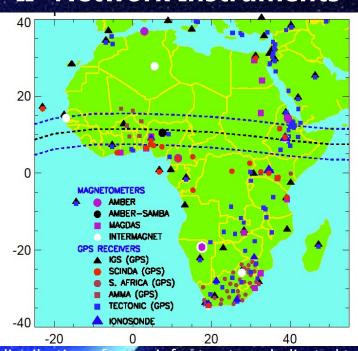


NigerBEAR, NIGERIA

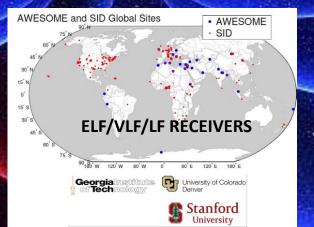
II- Network Instruments

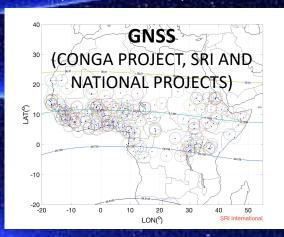
AND MORE TO COME!





some infrastructure dedicated to space Map of distribution of weather monitoring in Africa (Baki et al. 2023)





4. INTERNATIONAL COLLABORATION: Building the IMCP under the umbrella of ISWI and UNOOSA

NETWORKING ACTIVITIES

International scientific workshops:

IMCP 2024 WORKSHOP: Sao Paulo, Brazil, hosted by INPE, 22-27 Sept. '24

"FOUNDING" IMCP Europe-Africa-Pacific Workshop: Nigeria, 2024

 2 Regular Webinars for each of the two Great Circles, with mutual exchange of information Kick-off Winter-Spring 2024

"TECHNICAL" ACTIVITIES

- Coordinated Development of the Network
- Collaborative work on Pillar 3 "DATA"

