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The International Meridian Circle Program (IMCP): plans for international collaboration with European and African countries

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The Chinese science community is very active in the domain of Sun-Earth relationships, which has been the subject of a long tradition of collaboration with the French community. We will give an overview of China's flagship international federative ground-based project in this domain, the International Meridian Circle Program (IMCP).
The IMCP Observation System has been designed to provide key measurements for the space weather communities. In its current set-up, it deploys a set of middle to upper atmosphere monitoring instruments, including two ionospheric Incoherent scatter radars in Southern China, along the 120°E/60°W meridian, which covers China, South-east Asia, Australia and the Americas. Its space-based component includes several space missions to study (1) Solar activity (ASO-S), (2) the dynamics of magnetospheric boundaries (SMILE), (3) Magnetosphere-Ionosphere coupling (MIT) and (4) possible effects of earthquakes and other natural disasters (CSES- 1 and 2).

The Chinese IMCP community is now proposing to develop the international component of the Project by involving new partners in Europe and Africa. A way to do it could be to deploy instruments along a second major circle, 30°E (over Europe and Africa) and 150°W (over Alaska, the middle Pacific, Hawaii and French Polynesia which hosts an important multidisciplinary geophysical observatory). An additional dedicated space segment, using a series of micro/nanosatellites provided by the new partner countries and launched by China to perform critical measurements in the region of the atmosphere between 80 and 160 km altitude, is also foreseen.