

GGOS

GLOBAL GEODETIC OBSERVING SYSTEM

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IUGG



Global Geodetic
Observing System

Introduction

The Global Geodetic Observing System (GGOS) is **the contribution of Geodesy to the observation and monitoring of the Earth System**.

Geodesy is the science of determining and representing the shape of the Earth, its gravity field and its rotation as a function of time. A core element to reach this goal are stable and consistent **geodetic reference frames**, which provide the fundamental layer for the determination of time-dependent coordinates of points or objects, and for describing the motion of the Earth in space. With modern instrumentation and analytical techniques, Geodesy is now capable of detecting time variations ranging from large and secular scales to very small and transient deformations with increasing spatial and temporal resolution, high accuracy, and decreasing latency.

GGOS has been working closely with components of International Association of Geodesy (IAG) to provide consistent and openly available observations of the spatial and temporal changes of the shape and gravity field of the Earth, as well as the temporal variations of the Earth's rotation. These efforts make available a global picture of the surface kinematics of our planet, including the ocean, ice cover, continental water, and land surfaces, as well as estimates of mass anomalies, mass transport, and mass exchange in the System Earth. Surface kinematics and mass transport together are the key to global mass balance determination, and are an important contribution to understanding the energy budget of our planet. In order to play its vital role, **GGOS has following missions**; a) to **provide the observations** needed to monitor, map, and understand changes in the Earth's shape, rotation, and mass distribution, b) to **provide the global geodetic frame** of reference that is the fundamental backbone for measuring and consistently interpreting key global change processes and for many other scientific and societal applications, c) to **benefit science and society** by providing the foundation upon which advances in Earth and planetary system science and applications are built.

For the mission, GGOS works tighter with components of the IAG, more specifically, IAG Services, IAG Commissions and IAG Inter-Commission Committees. The IAG Services provide the infrastructure and products on which all contributions of GGOS are based, and the IAG Commissions and IAG Inter-Commission Committees provide expertise and support to address key scientific issues within GGOS. Together with the IAG components, GGOS provides the fundamental infrastructure underpinning Earth sciences and their applications.

New Website Released!

GGOS Launched its new website in December 2020. The new site focuses more on GGOS as the "Observing System" than on GGOS as the organization. Therefore, the IAG Services, Products and Observations are brought to the front page and are more visible and easier to be accessed. These new contents provides excellent entrance door to non-geodesists including earth scientists. The new site also has important new features such as a GGOS Blog which provides Latest News (Events, ...) and Popular articles related to geodesy.

Please visit our new site at

<https://ggos.org/>



GGOS Newsletter is also launched and the latest news and popular articles are distributed to registered users through the Newsletters. Please also subscribe at

<https://ggos.org/newsletter/>

Future Events

GGOS is planning at least 3 scientific sessions/meetings in 2021. An option to attend in virtual will be provided at each meeting.



GGOS Symposium at IAG Scientific Assembly

Beijing, China, June 28-July 3 2021

<http://www.iag2021.com/en/web/index/>

GGOS Symposium: "Global Geodetic Observing System (GGOS): the metrological basis for the monitoring of the System Earth"

- 5.1: Geodetic infrastructure for Earth System Monitoring
- 5.2: Gravity observations and networks in the framework of GGOS
- 5.3: Standardized geodetic products for a reliable System Earth observation
- 5.4: Geodetic space weather research
- 5.5: Assimilation of geodetic observations in the modelling of the
- 5.6: Geodesy contributions to address societal
- 5.7 : Advances in Geodesy for Geohazard Monitoring and Disaster Risk Reduction



GGOS Days 2021 (Hybrid of in-person & in-virtual)

Munich, Germany, 11-13 October 2021

<https://ggos.org/event/ggos-days-2021/>

AGU2021

New Orleans, USA, 13-17 December 2021

GGOS Session: "Geodesy for Science and Society"

The next GGOS Symposium will be held at IAG Scientific Assembly 2021 in Beijing, China during , June 28-July 3 2021. Please attend!