



# ABSTRACT SUBMISSION

We invite submissions to the below themes. Themes include, but are not limited to the examples given but are intended to span fundamental research through to industrial and policy applications across the whole Earth system and beyond. We encourage you to review all themes before selecting.

## THEMES

We ask you to select a theme where your research or application most closely aligns. Where appropriate we encourage you to select a secondary theme.

### 1. Geosciences

**Applying EO to understand land, subsurface processes, and environmental change**

**Topics include:** Geology, geophysics, geochemistry, geodesy or geomorphology. All topics connected to surface and sub-surface dynamics and their interactions with the atmosphere, oceans and land surface.

### 2. Carbon, Biomass and Natural Capital

**Using EO to quantify carbon cycles and ecosystem processes to support net zero and green finance**

**Topics include:** Quantifying the current state, dynamics and likely future of the terrestrial carbon cycle. Monitoring of biomass and ecosystem processes, including how to leverage new and diverse datasets: biomass includes terrestrial, coastal, oceanic and otherwise. Understanding current levels of confidence and identifying future opportunities.

### 3. Biodiversity, Habitat & Ecosystems

**Observing ecosystems to support protection, restoration, and sustainable use for policy, land management, and conservation practice**

**Topics include:** Protecting, restoring and promoting sustainable use of ecosystems, combatting desertification, and halting and reversing habitat degradation and biodiversity loss.

### 4. Inland Waters & Hydrology

**EO for understanding and managing freshwater systems and water risks**

**Topics include:** Biogeochemical cycling, biodiversity, erosion, sedimentation and more within freshwater systems. Including rivers, streams, lakes, ponds, and marshes. Their interactions with the land, oceans and atmosphere.

## 5. Cryosphere

Monitoring ice and snow as key indicators of global change

**Topics include:** Ice sheets and glaciers, permafrost, river and lake ice, seasonal snow cover, and sea ice, and the interaction of the cryosphere with the Earth system.

## 6. Oceans, Coasts and Marine Systems

EO applications for marine environments and the blue economy

**Topics include:** Understanding of the oceans and coastal area and their processes, including physical, biogeochemical, and sedimentary ocean processes and their interactions with land, atmosphere and other components of the Earth system.

## 7. Climate Change & Global Cycles

EO insights into climate monitoring and global Earth system interactions

**Topics include:** Monitoring and diagnosing teleconnections and forecasting climate change. Including the role of exchanges between atmosphere-water-land and interactions between global biogeochemical and biogeophysical cycles.

## 8. Resilience, National Security & Dual Use

Using EO to identify and mitigate risks across civil and security domains

**Topics include:** Identification and mitigation of risk to National Security and societal resilience. Such as digital (networks, servers) and physical infrastructure (e.g. road, rail, power), ecosystem degradation and collapse (climate regulation), food security and more. Technology which can be applied to multiple use cases, both civil and defence.

## 9. Disaster Prediction & Response

EO for early warning, real-time response, and recovery

**Topics include:** Data collection and interpretation for early warning systems; modelling or prediction of future disasters or their impacts in certain areas; provision of real-time data to support disaster relief first responders; long-term disaster recovery. Disasters natural or otherwise.

## 10. Sustainable Development, Social Impact & Policy

Delivering societal value through EO-informed decision-making

**Topics include:** The use of EO data in support of Sustainable agriculture & aquaculture, reduction in inequality, and any other Sustainable Development Goals. EO data supporting socioeconomic improvement, policy development and regulation.

## 11. Meteorology & Atmospheric Chemistry

EO for weather, air quality, and atmospheric processes

**Topics include:** Monitoring and forecasting weather and atmospheric transport. Advances in atmospheric chemistry, quantifying the impacts of pollutants, and chemical interactions of weather, oceans and land on local to global scales.

## 12. Space Innovation & Future EO Capabilities (Beyond Earth)

Advancing our understanding of space-based observations and Earth systems

**Topics include:** Space weather prediction and monitoring; impacts of space weather on remote sensing infrastructure; space weather intersecting with Earth processes and risks. Lessons learned from lunar and planetary remote sensing.

## 13. AI & Digital Infrastructure

Unlocking EO value through data platforms, computing, and advanced analytics

**Topics include:** AI and machine learning for EO; Data platforms (e.g. EO Data Hub, CEDA/JASMIN); on board processing, Digital twins and large-scale modelling and data pipelines from acquisition to decision-making.