

GNSS Activity of COSPAR

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(ICG)

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Committee on Space Research COSPAR

- the International Council of Scientific Unions (ICSU), now the International Council for Science, established its Committee on Space Research (COSPAR) in 1958.
- COSPAR's first Space Science Symposium was organized in Nice in January 1960.
- Objectives: to promote an international scientific research in space, organize exchange of results, information and opinions, and to provide a forum for the discussion of problems of the scientific space research

COSPAR membership

- 45 countries, all space powers including
- 13 scientific unions:

Intl. Astronomical Union (IAU)

Intl. Mathematical Union (IMU)

Intl. Society for Photogrammetry and Remote Sensing (ISPRS)

Intl. Union of Biochemistry and Molecular Biology (IUBMB)

Intl. Union of Biological Sciences (IUBS)

Intl. Union of Crystallography (IUCr)

Intl. Union of Geodesy and Geophysics (IUGG)

Intl. Union of Geological Sciences (IUGS)

Intl. Union of Pure & Applied Chemistry (IUPAC)

Intl. Union of Pure & Applied Physics (IUPAP)

Intl. Union of Physiological Sciences (IUPS)

Intl. Union of Theoretical & Applied Mechanics (IUTAM)

Intl. Union of Radio Science (URSI)

COSPAR Scientific Commissions

- SC A on Space Studies of the Earth's Surface, Meteorology and Climate
- SC B on Space Studies of the Earth-Moon System, Planets, and Small Bodies of the Solar System
- SC C on Space Studies of the Upper Atmospheres of the Earth and Planets Including Reference Atmospheres
- SC D on Space Plasmas in the Solar System, Including Planetary Magnetospheres
- SC E on Research in Astrophysics from Space
- SC F on Life Sciences as Related to Space
- SC G on Materials Sciences in Space
SC H on Fundamental Physics in Space

COSPAR Panels

- Technical Panel on Satellite Dynamics (PSD)
Panel on Technical Problems Related to Scientific Ballooning (PSB)
Panel on Potentially Environmentally Detrimental Activities in Space (PEDAS)
Panel on Radiation Belt Environment Modelling (PRBEM)
Panel on Space Weather (PSW)
Panel on Planetary Protection (PPP)
Panel on Capacity Building (PCB)
Panel on Education (PE)

COSPAR bodies interested in GNSS

- A1 on Atmosphere (incl. Troposphere and Stratosphere), Meteorology and Climate
- A2 on Ocean Dynamics and Productivity
- A3 on Land Processes and Morphology
- B2 on International Coordination of Space Techniques for Geodesy and Geodynamics - a joint Sub-Commission with IUGG/IAG Commission I on Reference Frames
- C1 on the Earth's Upper Atmosphere and Ionosphere
- C2 on the Earth's Middle Atmosphere and Lower Ionosphere
- URSI/COSPAR Task Group on the International Reference Ionosphere (IRI)
- SC H on Fundamental Physics in Space
- Technical Panel on Satellite Dynamics (PSD)
- Panel on Space Weather (PSW)

COSPAR-UN conferences

- COSPAR-IAF Scientific Symposium
Applications of satellite navigation and
their benefits to developing countries
(Vienna, 17 - 18 February, 2003).

8 presentations

Panel on Satellite Dynamics

- Responsible for orbital problems
- Discussion of GNSS during scientific sessions
- In 2006 Beijing PSD meeting over 15 papers addressing GNSS
- In charge of collecting the information from all COSPAR groups and presentation to ICG

Interest of other COSPAR bodies in GNSS

- Traditionally in COSPAR bodies like Panel for Satellite Dynamics, SC B.2 CSTG (International Coordination of Space Techniques for Geodesy and Geodynamics), SC C-1 on Upper Atmosphere and Ionosphere, the subject of GNSS development, results and applications have been discussed. In particular the in frame of the SC B.2-CSTG the concept of International GNSS Service has been developed and now this service provides the most accurate ephemeris for GPS and its results are very fundamental for the International Earth Rotation Service.
- Nowadays GPS provides the most applied method for the artificial satellites orbit control and determination.
- GNSS data provides the source of new scientific information for the research of Earth dynamics, Earth atmosphere and ionosphere modeling, relativity and others. These topics are discussed at COSPAR scientific meetings.
- Contribution of COSPAR to ICG interesting for both organizations.

Proposed input from COSPAR to ICG Work Plan

- ICG information portal
- Ad hoc working group to identify undergraduate and graduate courses on GNSS.
- Identify international conferences where presentations on the development of the GNSS could be done.
- Ad hoc working group to develop a strategy for support of regional reference systems
- Ad hoc working group to develop a strategy for support of mechanisms to detect and mitigate sources of electromagnetic interference.
- Ad hoc working group to develop a reference document on models and algorithms for ionospheric and tropospheric corrections.



*Thank you for your
attention*