

PARK, Kyung Sun

Invited Professor (PI), Chungbuk National University
Chungdae-ro 1, Seowon-Gu, Chungju, South Korea
Mobile: +82-10-7220-0715, Email: kspark@cbnu.ac.kr

Current Research Interests:

Global MHD simulation of the solar wind-magnetosphere and ionosphere interaction: Effect of the dipole tilt and IMF conditions. Investigating the remaining challenges in planetary magnetospheric dynamics and turbulence: How does it change under unusual solar wind conditions?

My research focuses on utilizing a 3-D global MHD simulation to comprehensively understand the magnetic field topology and magnetospheric and ionospheric response under various solar wind conditions. The study aims to identify the drivers of disturbances in the space environment, not only during extreme conditions but also in quiet solar wind periods. It will investigate the impacts of the CME structure (such as shock, sheath, and MFR) on the magnetosphere and ionosphere. The simulation results will answer questions about when, where, and which magnetic reconnection and vortex (e.g., KH waves) occur at the magnetopause boundary and how to understand turbulence, providing insights into 3-D magnetic field topology and dynamics and plasma properties.

Research interests include

- Magnetic reconnection and vortex structure/process in the magnetosphere and influence on the ionosphere
- Magnetic storm and substorm
- 3D global MHD simulations of the Mercury, Uranus, Neptune magnetospheres and the Moon, Venus, Mars
- Solar energetic particles in the space environment, High energy particle physics (human risk)

Biographical Sketch:

- Ph.D. in Science (2006.04), Nagoya University, Japan, Division of Particle and Astrophysical Science (Solar and Space Physics), Institute for Space-Earth Environmental Research (Solar-Terrestrial Environment Laboratory)
- Invited Professor (2016.04 - present)
Chungbuk National University, South Korea
- Invited Associate Professor (2015.11 - 2016.04) and Lecturer (2015.03 - 2016.01)
Chungbuk National University, South Korea
- Research Professor (2010.05 - 2013.08/2013.10 - 2015.02) and Researcher (2009.05 - 2010.04)
Kyung Hee University, South Korea
- Researcher (2008.07 - 2009.04) and Brain Korea 21 Researcher (2006.08 - 2008.06)
Chungnam National University, South Korea
- Cooperative Researcher (2005.04 - 2006.08)
Nagoya University (STEL), Japan

Conference Services:

- Solar-Terrestrial Environment division committee member of the Korean Space Science Society (2020-2021,2024 -)
- Conference organizing committee chair of the KSSS (2022 -)
- Board member of the KSSS (2022 -)
- DEI (Diversity, Equity and Inclusion) committee member of the KSSS (2024 -)
- Asia Oceania Geosciences Society (AOGS) Solar and Terrestrial Sciences, Section Secretary (2022 -)
- Association of Asia Pacific Physical Societies-Division of Plasma Physics (AAPPS-DPP), MF2(Organized Session) Scientific Program committee (2023)

others: Social activity

Cooperation in student teaching at Chungbuk Science High School (2022, 2024)