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The microwave instruments are used many areas of the space remote sensing and space science applications. The imaging radar of synthetic aperture radar (SAR) is well known microwave radar sensor for earth surface and ocean research. Unlike radar, microwave radiometer is passive instrument and it measures the emission energy of target, i.e. brightness temperature BT, from earth surface and atmosphere. From measured BT, the geophysical data like cloud liquid water, water vapor, sea surface temperature, surface permittivity can be retrieved. In this paper, the radiometer characteristics, system configuration and principle of BT measurement are described. Also the radiometer instruments TRMM, GPM, SMOS for earth climate, and ocean salinity research are introduce. As first korean microwave payload on STSAT-2, the DREAM (**D**ual-channels **R**adiometer for **E**arth and **A**tmosphere **M**onitoring) is described the mission, system configuration and operation plan for life time of two years. The main issues of DREAM unlike other spaceborne radiometers, will be addressed. The calibration is the one of main issues of DREAM mission and how it contribute on the space borne radiometer. In conclusion, the radiometer instrument to space science application will be considered.

■ Session Ⅷ-1 : Space Environment 3
Thursday, 23 October [15:15-17:15]

[Ⅷ-1-1] Construction of Korean Space Weather Prediction Center: Introduction

Kyung-Suk Cho, Su-Chan Bong, Yeon-Han Kim, Khan-Hyuk Kim, Junga Hwang, Young-Sil Kwak, Rok-Soon Kim, Jae Jin Lee, Seonghwan Choi, Ji-Hye Baek, and Young-Deuk Park

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It is well known that solar and space weather activities can influence the performance and reliability of modern technological system and can endanger human life. Since 2007, the Korea Astronomy and Space Science Institute (KASI) has initiated a research project for the construction of Korean Space Weather Prediction Center (K-SWPC) to make preparations for the next solar cycle maximum (~2012). In this talk, we briefly introduce the current progress of KASI activities for K-SWPC; extension of ground observation system, construction of space weather database and network, development of prediction models, and space weather effects. In addition, future plans for KSWPC will be discussed.

[Ⅷ-1-2] Construction of Korean Space Weather rediction Center: K-SRBL

Su-Chan Bong[1], Yeon-Han Kim[1], Kyung-Suk Cho[1], Seonghwan Choi[1], Young-Deuk Park[1], and Dale E. Gary[2]

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A major solar radio burst can disturb many kinds of radio instruments, including cellular phone, GPS, and radar. Korea Astronomy and Space Science Institute (KASI) is developing Korean Solar Radio Burst Locator (KSRBL) in collaboration with New Jersey Institute of Technology. KSRBL is a single dish radio spectrograph, which records the spectra of microwave (0.5 – 18 GHz) bursts with 1 MHz spectral resolution and 1 s time cadence, and locates their positions on the solar disk within 2 arcmin. Hardware manufacturing is almost completed including 4-channel digitizer/FPGA. The system is currently installed at Owens Valley Radio Observatory (OVRO), and test of the operation is in progress. It will be installed at KASI in 2009. We report current status and test results of KSRBL.

[Ⅷ-1-3] Construction of Korean Space Weather Prediction Center: Magnetometer

Khan-Hyuk, Kim[1], Seong-Hwan, Choi[1], Kyung-Seok, Cho[1], Young-Deuk, Park[1], and Kyu-Chul, Choi[1,2]

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Solar and Space Weather Research Group in Korea Astronomy & Space Science Institute (KASI) has been funded for "Construction of Korean Space Weather Prediction Center" from Korean government. It has started since 2007 February and is planed as a 5-year project. The goal of this project is to develop a space weather warning and prediction system by the next solar maximum. KASI installed a magnetometer at Mt. Bohyun, which is about 200 km south-east apart from KASI, in 2007 September. After finishing test observations of the magnetometer for the period from September 2007 to January 2008, KASI has operated the magnetometer to monitor geomagnetic field variations associated with space weather effect. Ground-based magnetometers are critical for understanding geomagnetic disturbances in the near-Earth space environment, which are caused by solar wind variations. In this talk, we introduce science topics to be done with the data from KASI magnetometer and also discuss how they are related to space weather phenomena.

[Ⅷ-1-4] Construction of Korea Space Weather