JUL.16-18 LC2019 Changchun, CIOMP

The Joint Total Solar Irradiance Monitor for FY-3E Satellite

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The Joint Total Solar Irradiance Monitor (JTSIM) for Feng Yun–3E (FY–3E) satellite is a space–based total solar irradiance (TSI) measuring experiment. JTSIM/FY–3E mainly consists of pointing system, the thermal control system, the electronics, Digital Absolute Radiometer (DARA) developed by Physical Meteorological Observatory in Davos (PMOD) and Solar Irradiance Absolute Radiometer (SIAR) developed by Changchun Institute of Optics, Fine Mechanics and Physics (CIOMP). With these two radiometers, JTSIM/FY–3E will get long–term stability of space–based TSI measurement, which is similar to ground–based World Standard Group (WSG). Compared to the previous generation of SIAR on TSIM/FY–3C, SIAR on JTSIM/FY–3E has a faster response time, which gives it the rapid measuring ability. And it also uses a three–channel structure to improve its calibration ability for on–orbit degradation of the cavity detector. A general description of the JTSIM, including the instrument modules, uncertainty evaluation, and its operation mode, is given in this presentation.

SHORT BIO:

Wei Fang is the professor in optical engineering at Changchun Institute of Optics, Fine Mechanics and Physics. She received the Ph D. degree in optical engineering from Changchun Institute of Optics, Fine Mechanics and Physics. She has been engaged in related research about absolute radiometric measurement, measurement & calibration of solar irradiance and absolute calibration of space optical remote sensing instrument since 1987. She was the project leader of Solar Irradiance Monitor for FY–3A satellite (launched in 2008), FY–3B satellite (launched in 2010) and FY–3C satellite (launched in 2013). She is currently the project leader of Joint Total Solar Irradiance Monitor for FY–3E satellite.