

NCC Calibration Seminar



Title: SI-traceable terrestrial broad-band solar measurements

Speaker: Dr. Howard Yoon, Sensor Science Division, National Institute of Standards and Technology (NIST)

Date & Time: Friday, April 27th, 2:00pm - 3:00pm

Location: Conference Room 4102 (4th floor), ESSC Building (free parking) 5825 University Research Ct., College Park, MD 20740

Abstract:

The measurement of the total terrestrial solar irradiance is extremely important for solar energy harvesting and for the monitoring of climate change. The measurement of direct solar down-welling irradiance is performed using pyrheliometers. These radiometers operate by using the electrical substitution principle where the temperature rise of the sensor from the incident radiation is compared to the same increase in the temperature with electrical power. At present, there is no direct SI traceable calibration of these radiometers, and they are traceable to the World Radiometric Reference which is maintained by a set of pyrheliometers at the World Radiometric Center in Davos, Switzerland, where the scale is defined as the mean of the set of instruments. When the scale was first established in 1980, a set of 15 instruments were used, and over time, as some of

the instruments drifted outside the mean, outlier instruments were discarded so that, now, only 4 instruments are used to maintain the scale. We propose to develop SI traceable calibration procedures and a facility at NIST which is capable of issuing calibrations to both national and international customers.



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