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Performance of GPS based solar tracker at IMD's WRDC Solar Radiation Station
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Central Radiation Lab, Pune of IMD is running a network of 45 radiation stations. Multiple radiation sensors are installed at network stations for measurement of different parameters. The Pyrheliometer is designed for continuous measurements and hence it is provided with an optically true glass window with uniform transmission in the 290-4000 nm wavelength range. The Pyrheliometer is mounted on a two axis solar tracker and continuous recordings are obtained on the data logged by a data logger. It allows convenient automatic pointing of normal incidence solar radiation measuring instruments towards the sun. Some of Radiation Stations equipped with Pyrheliometers(IMD make), have heliostat (IMD make) and other Radiations Stations have Automatic computer based tracker model SMT, make Eppley. Purpose of any solar tracker is to continuously track the Sun so that Pyrheliometer mounted over the tracker will always be aligned to the Sun. This enables a Pyrheliometer (mounted on the solar tracker) to measure Direct Normal Incidence radiation (DNI). Recently IMD has procured GPS based solar tracker for Direct Normal Incidence radiation. This solar tracker is operated on 12 V battery and battery is charged by or solar panel. A 9 Nos. GPS based solar tracker of have been installed at WRDC solar Radiation Stations. The performance is continuously being monitored and is found to be satisfactory. In future IMD is planning to have all GPS based solar tracker to have DNI measurement. Key Words; Solar tracker, Pyrheliometers