Modelling of Dynamic Snowmelt Runoff and Hydropower Generation based on Spaceborne Remotely Sensed Snow Cover and Ground Weather Network based Temperature and Precipitation Data

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Snow is an important source of freshwater in mountain watersheds in the high latitudes. Modelling of snowmelt derived runoff helps researchers understand the hydrological process, and enables estimation of flood, freshwater resources, and hydroelectricity generation. Advances in satellite remote sensing techniques has enabled continuous monitoring of snow cover at high spatial and temporal resolutions. Locating the optimal hydropower sites along with their potential hydropower output can assist in development of new hydroelectric dams, reducing the energy load on current stations by contributing to the energy production. In today's talk, Mr. Ninad Bhagwat will talk about the development of Parsimonious Multi-dimensional Moving Window (PMMW) model developed to locate the potential hydropower sites, along with the modifications in the Snowmelt Runoff Model (SRM). The developed model can be used worldwide with free and open source datasets to locate the ideal sites for hydropower production, along with their estimated power output.