



**International Science Workshop**

on

**High-Resolution  
Thermal Remote Sensing**



**19-21 November**

**2024**

... **VENUE** ...

**Ahmedabad**

**Gujarat, India**

**Organized by  
Indian Space research Organisation**

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## About Workshop

ISRO and French Space Agency, CNES, are jointly developing a state-of-the-art Thermal Infrared (TIR) - Visible Shortwave InfraRed (VSWIR) Imaging Satellite mission TRISHNA for High-resolution natural resources assessment. The satellite is planned to be launched on-board PSLV during 2026-27 and data will be acquired globally from four (4) TIR bands during both noon and night time as well as in seven (7) VSWIR bands at 57m spatial resolution with 3-day revisit period. The mission will provide a consistent and systematic records of surface temperature in addition to several biophysical variables to solve surface energy balance to model heat fluxes and estimate evapotranspiration. To reach out to the Indian and global science community and various user agencies/departments for awareness creation and larger involvement in the utilization of TRISHNA data and science products, a 3-day workshop is planned to be organized by ISRO during November 19 - 21, 2024 with pre-workshop tutorial workshop during November 16 - 18, 2024 at Ahmedabad.

## Objectives

- Scientific updates on applications of thermal and optical data on earth system research
- Current and planned international high resolution thermal missions for terrestrial and coastal applications
- Science products generation, product validations and data dissemination
- Creating awareness and capacity building for simultaneous use of high-resolution thermal and optical data
- Operational applications development for societal benefits areas using high resolution thermal observation data simultaneously with optical data.
- Developing international cooperation product calibration-validation and applications

## Workshop Themes

Earth system research and scientific appraisal

- *Ecosystem stress and water use (i.e. Monitoring of water & energy exchange of the continental biosphere)*
- *Coastal and inland waters (i.e. monitoring of meso-scale, sub meso-scale dynamics).*
- *Urban (i.e. Monitoring of fluxes of urban surfaces)*
- *Solid Earth (i.e. Monitoring of volcanology, sub-surface fire etc.)*
- *Cryosphere (i.e. Monitoring of snow-melt run-off, Glacier debris, high-altitude lake dynamics)*
- *Atmosphere (i.e. Monitoring aerosol, water vapor, cloud type)*

Applications development for societal benefit area:

- *Drought assessment for early mitigation of crop failures*
- *Irrigation management through optimal irrigation scheduling based crop water requirements and improving water use efficiency*
- *Snowmelt- runoff rate forecast modelling for reservoir operations in summer months.*
- *Agromet advisory services for the benefit of farmers*
- *Urban heat island dynamic mapping & issuance of heat alerts/ warnings*
- *Sub-surface coal fire & thermal anomaly for managing coal fires*
- *Coastal and inland water quality and thermal pollution monitoring*

Mission calibration and data validation plans, data quality assurance and uncertainty quantification

Exploring synergies with other current and future space-based systems (e.g. Landsat, Sentinel, LSTM, SBG)

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