



Our ref.: 02351/2025/I/WIGOS

7 March 2025

Annexes: 2 (available in English only)

Subject: WMO HydroHub Innovation workshop on surface velocimetry

Action required: Expression of Interest through application submission by **21 March 2025**

Dear Sir/Madam,

The World Meteorological Organization (WMO) Global Hydrometry Support Facility (WMO HydroHub) aims at enhancing water monitoring systems worldwide by supporting National Meteorological and Hydrological Services (NMHSs) in their hydrological data collection, management and sharing for informed decision-making in all aspects of water resources management.

The WMO HydroHub Innovation Calls aim to identify and operationalize innovative solutions to hydrometric challenges faced by NMHSs. So far, three projects focusing on surface image velocimetry have been awarded in the framework of WMO HydroHub Innovation Calls. Implemented in the United Republic of Tanzania, Fiji and most recently in Latin America and the Caribbean, these projects enable non-intrusive and cost-effective measurement.

Building on the successes and lessons learned from these Innovation Calls, as well as the experience and expertise of individuals already using these methods within their Organization, the WMO HydroHub, with the kind invitation of the *Instituto Costarricense de Electricidad* (ICE), is organizing an Innovation Workshop on Surface Velocimetry in Hydrology. The workshop will take place on 23 and 24 May 2025 in San José, Costa Rica.

This workshop aims to bring together individuals who wish to learn how to apply image velocimetry methods to measure river discharge. The workshop will be hands-on, participants will learn how to collect field data and process videos recorded from fixed cameras and drones. By the end of the workshop, participants should be able to confidently collect and process videos using image velocimetry methods. A tentative agenda is provided in [Annex 1](#). While the primary language will be English, presentations and discussions will also be held in Spanish to accommodate participants.

I am pleased to formally invite you to disseminate this opportunity among NMHSs, river basin organizations, relevant research institutes, private sector, Citizen Science projects and academic institutions within your region; the target audience is field practitioners who will start using these methods within their organizations and train others to do the same.

Stakeholders interested in participating are invited to submit an expression of interest by completing the application form ([Annex 2](#)) **by 21 March 2025**.

To: Hydrological Advisers and Regional Hydrological Advisers of Members of RA III and IV

cc: Mr Lucas Chamorro, President of the Working Group on Hydrology and Water Resources RA III

Please note that, due to budget constraints, WMO can only provide financial support (covering travel expenses and/or the daily subsistence allowance) for a limited number of participants, prioritizing those from NMHSs involved in river flow measurements. Applications will undergo a selection process conducted by an internal WMO Secretariat team, ensuring a balanced representation of geographical regions (RA III South America and RA IV North America, Central America and the Caribbean) and gender, among other criteria.

Selected participants will be contacted individually by the WMO Secretariat to confirm their availability and participation in the workshop.

Participants willing to fund themselves are encouraged to do so. If you chose to fund yourself, kindly fill in the attached form in [Annex 2](#).

Regarding insurance coverage for non-staff members, may I draw your attention to the following:

Non-staff members of WMO who are authorized to travel at the Organization's expense and/or who are receiving a DSA from WMO must ensure they are fully responsible for expenses incurred in the event of death, illness or injury during official travel and attendance at meetings on behalf of the Organization. They are, therefore, fully responsible for arranging life, health, and accident, as well as any other forms of insurance with an adequate level of coverage for the duration of such meetings and events.

WMO liability is limited to the performance of services or attendance at a meeting on behalf of the Organization, is covered by an injury and illness benefit insurance which provides limited coverage for medical, emergency, and supplementary official travel expenses.

For any questions or further clarification, please do not hesitate to contact the WMO Secretariat by email at hydrohub@wmo.int.

I take this opportunity to thank you for your support of the WMO activities and look forward to your cooperation in promoting this important workshop.

Yours faithfully,



Ms Ko Barrett
for the Secretary-General

TENTATIVE AGENDA

Participants will receive theoretical documentation in English and Spanish, including detailed instructions, which must be reviewed before attending the workshop.

Day 1 Field measurements on a local river

Morning session

Introduction to the fundamentals of image velocimetry

Visit of a flow monitoring site:

- Establishment of a fixed camera image velocimetry site for discharge measurement
- Establishing and surveying ground control points for video calibration and analysis
- Surveying cross sections

Afternoon session

Drone measurements: use of drones to capture video footage during flood events for image velocimetry measurements.

Comparison measurements of discharge using traditional methods

By the end of the day all participants should be confident in collecting image velocimetry data. They shall have a range of videos for processing on Day 2.

Day 2 Software introduction and image velocimetry data processing

Morning session

Video processing for velocity and discharge calculation using:

- Videos collected from fixed cameras and drones on Day 1
- Sample datasets from other countries for practice exercises

Afternoon session

Analysis of processed results: comparison with known discharge values

Q&A session and discussion with image velocimetry experts

Participants feedback

Workshop closure

Link to the Application Form

INNOVATION WORKSHOP ON SURFACE VELOCIMETRY IN HYDROLOGY

23 and 24 May 2025 (San José, Costa Rica)

Application form - Innovation
workshop on surface velocimetry
in hydrology


