

TRDI ChannelMaster H-ADCP and Velocity Indexing

Duration: 2 days

Synopsis

Horizontal/side looking Acoustic Doppler Current Profilers (ADCPs) are increasingly used for river, stream and other open channel flow measurement due to their relatively low costs, ease of installation, low power requirements and their minimal environmental impact. This course provides an introduction to the principles of flow measurement using horizontal ADCPs, applications, attributes, limitations, installation requirements and the analysis and processing of the recorded data, including the velocity index method of calibration. This course will be mainly office based but will include a field visit to inspect an installation and download data.

Prerequisites

None.

Outcomes

After taking this course, delegates should be able to install a ChannelMaster, download data and produce an index velocity rating to calibrate the instrument and produce flow data.

Content

The course content is normally adjusted to focus on the needs of participants and would normally include all of the following:

- Acoustic Doppler theory, how side-lookers work.
- Horizontal ADCPs, attributes and limitations.
- ChannelMaster data collection, what the instrument is actually measuring.
- Hydraulic theory and how it may affect data collection.
- Site selection issues.
- Installation of the ChannelMaster and associated equipment.
- Field visit to inspect a ChannelMaster and download data.
- The Index Velocity method.
- Data requirements for the development of Index Velocity Ratings.
- Derivation of stage-area relationships.
- Simple index-velocity ratings.
- Complex rating relationships.
- The use of VimTool to derive index velocity ratings.
- Computation of discharge and uncertainty analysis.

Tuition uses a hands-on approach, with no more than six participants per tutor. The main features of each topic are explained using a projector, after which participants are given appropriate tasks. Exercises are used for extension and consolidation, so participants can work through a sequence of operations that are typical of the sort of things that may need to be done with live data.