

Rating, Shifts, and Record Concepts

Brasilia, Brazil October 24-27, 2017

Instructors: Anthony Gotvald, Chris Smith

Tuesday, October 24

09:00AM-09:30AM Welcome and Introductions-Instructors and class participants will introduce themselves and their current positions. Participants will provide an explanation of their expectations for the class.

09:30AM-10:15AM USGS/ANA/CPRM Collaboration and class outline. *CAS*

10:15AM-10:30PM Break

10:30AM-11:00AM USGS Streamflow Data-History and introduction to USGS methods for collection and correction of stage/discharge ratings. *CAS*

11:00AM-11:30AM Measurements-Location, mean gage height, check measurements, and discharge measurement certainty. Why doesn't the USGS measure at the same cross section everytime? *CAS*

11:30AM-01:00PM Lunch

01:00PM-02:30PM Stage Data-Computing and correcting continuous stage time series data. USGS methods for processing continuous water level data. This will cover datum and gage height corrections, handling missing data, peak stage verification, and rating quality of the water level data. *CAS*

02:30PM-03:00PM Break

3:00 PM-3:30PM DEMONSTRATION-Applying datum and gage-height corrections in AQUARIUS. Methods used by USGS to compose a stage/discharge rating in Aquarius using multiple offsets and ensuring that the rating is representative of channel geometry. *AJG*

3:30 PM-4:00PM EXERCISE-Applying a gage-height correction in AQUARIUS.

04:00PM-04:30PM Controls and stage/discharge relationships-Types of controls and how these controls change to affect the stage/discharge relationship. *CAS*

Wednesday, October 25

09:00AM-09:15AM Review of previous day's curriculum. *CAS*

09:15AM-10:15AM Rating Scales and Offsets-Importance of offsets and how to determine them. Gage-height of zero flow and it's affect on the offset. Effects of incorrect offsets. *AJG*

10:15AM-10:30AM Break

10:30PM-11:30PM EXERCISE-Reading logarithmic scales and choosing offsets. DEMONSTRATION-Offsets and scales in Aquarius. *AJG*

11:30AM-01:00PM Lunch

01:00PM-2:00PM Ratings for natural channels-Rating shapes in natural channels-Discussion of section, channel, and overbank rating shapes. *CAS*

2:00PM-3:00PM Multiple Offsets-How to use multiple offsets to improve ratings. DEMONSTRATION-Composing a rating in Aquarius. Methods used by USGS to compose a stage/discharge rating in Aquarius using multiple offsets and ensuring that the rating is representative of channel geometry. *AJG*

03:00PM-03:30PM Break

3:30PM-4:30PM EXERCISE-Developing a multiple offset rating in Aquarius. *AJG*

Thursday, October 26

09:00AM-09:15AM Review of previous day's curriculum. *CAS*

09:15AM-10:15AM Rating extensions-Why does the USGS extend ratings. Methods and reasonable practices used to properly extend ratings on the upper and lower end of the rating. DEMONSTRATION-Extending the ratings in Aquarius. *AJG*

10:15AM-10:30AM Break

10:30AM-11:30AM EXERCISE: Rating extension. Compare results from the exercise. *AJG*

11:30AM-01:00PM Lunch

1:00PM-2:00PM Shifts Application-Need for shifts and how control changes require the need for a shift. An explanation of the practical application of shifts to the rating. Compound shifts. *CAS*

2:00PM-2:30PM DEMONSTRATION - Application of shifts in AQUARIUS. *AJG*

02:30PM-03:00PM Break

3:00PM-3:30PM EXERCISE - Applying a shift in AQUARIUS. *AJG*

03:30PM-04:00PM DEMONSTRATION-Methods used by USGS for estimating discharge data in AQUARIUS.

04:00PM-04:30PM EXERCISE-Estimating discharge data in AQUARIUS.

Friday, October 27

09:00AM-09:15AM Review of previous day's curriculum. *CAS*

09:15AM-09:30AM Loops in the stage/discharge rating caused by storage and variable backwater. Tidal effects on stage/discharge rating. *AJG*

09:30AM-10:15AM Complex Ratings-Index Velocity Method. *AJG*

10:30AM-11:30AM Complex Ratings-Rate of change in stage and slope ratings. DAMFLO program used to compute flow through Dams. *AJG*

01:00PM-02:30PM Discharge Data-Computing and correcting continuous discharge time series data. USGS methods for processing continuous discharge data. This will cover application of shifts to continuous data, estimating missing discharge data, hydrographic comparison, and rating quality of discharge data. *CAS*

02:30PM-03:00PM Break

03:00PM-04:30PM Station documentation associated with USGS data. Specifically related to the ongoing documentation of continuous data. *CAS*