

Always a Step Ahead in Discharge Management: with a Clear Overview of Complex Processes.

RATING CURVE DEVELOPMENT

KISTERS' rating curve editor (SKED) combines the experience of rating curve experts from around the world. SKED generates solutions and workflows for natural flow cross sections (e.g. in compliance with the "Pegelvorschrift" (the German Manual for Water Level Gauging and Discharge Measurements) and standard cross sections (e.g. in compliance with British Standards, USGS methods). Even complex tasks, such as solutions according to the stage-fall method or hysteresis are easily solved with SKED.

SKED does not only generate stage-discharge relationships, but also operates generally on the basis of source and target parameters. SKED also proves useful in the construction of storage capacity curves.

Powerful rating curve management

Rating curves are not created in one day. You can exploit the advantages of previous rating curve versions in order to map your creation history step by step, or you can optimise the quality of those rating curves by selecting another process.

SKED rating curve management is based on the proven WISKI station model. Any number of rating curves and versions can be generated and managed for a station and its associated parameters. Maintain the rating curve history and let SKED and WISKI

know which rating curve should be used to determine the discharge for specific time ranges. Rating curves can either border seamlessly, or have defined cross over areas.

Direct access to measurements

SKED has full access to all BIBER measurements. You can search for the appropriate selection of measurements needed to generate your rating curve by filtering measurements on

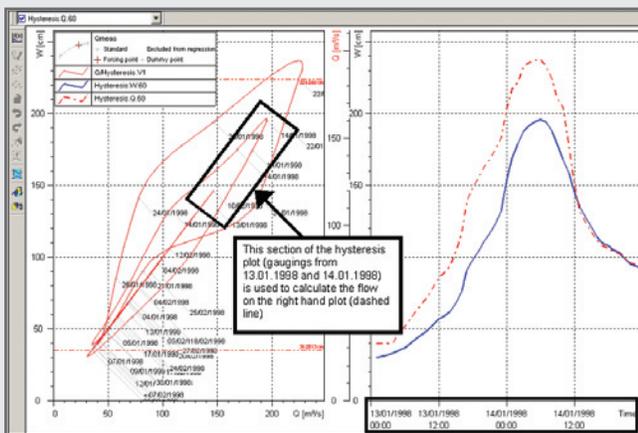
- Time range
- Source value range
- Target value range
- Meter
- Measuring team
- Ascending / Descending branch
- etc.

Filter criteria can be sequentially applied and combined as necessary to derive the appropriate dataset with certainty. Changes in the stage-discharge relationship are recognised easily with the help of cross-profiles. You can also blend in dry and/or wet profiles of the measurement.

Analysis methods

Let SKED do the calculations. You can set regression ranges (bordering or overlapping) and select an appropriate regression process for each area. Select from:

- Linear regression
- Power law function (solution via logarithms or according to the Lauffer procedure)
- Shifted power law function (solution via logarithms or according to the Lauffer procedure)
- Logarithmic regression
- Polynomial of 1st to 5th order
- Exponential function



You can blend in the confidence interval for each segment, and exclude single or multiple measurements from the regression. Regression ranges can be graphically altered, and the regression will be updated immediately. Saving previous regression attempts improves the basis for comparison. You can go back a step at any time. Areas that are only sparsely populated with measurement data can be supplemented using construction points.

Construction points influence the regression like actual measurements, but are clearly marked as construction points. You can choose between two forcing points to influence your regression results: one for high water and one for low water ranges.

Rating curve procedure

For standard cross sections following the power law, appropriate regressions can be applied as a rating curve at the push of a button.

Natural cross sections, in certain circumstances influenced by aquatic growth, show an irregular distribution of measurements. Here, regression is often only appropriate as a suggestion. The rating curve itself is constructed manually. You can graphically insert any number of descriptor points, and SKED will connect them linearly or through a spline. The descriptor points can be moved individually to precisely construct your rating curve.

Confidence intervals can be statistically calculated as a deduction from the rating curve and displayed as a plausibility check for each rating curve version. Velocities of flow, as well as wet and dry profiles, can be displayed and calculated and product analyses of individual regression curves (e.g. median flow cross section and mean velocity) can be carried out. Similarly, you can display large deviations from the measured values in comparison with the rating curve.

You can preview the relevant flow time series before your rating curve is released for flow calculation.

Progress and success in water management:

With SKED and the competence of pioneers.