Hydrology

Water
Environment
Civil Engineering
Informatics
Energy
Architecture

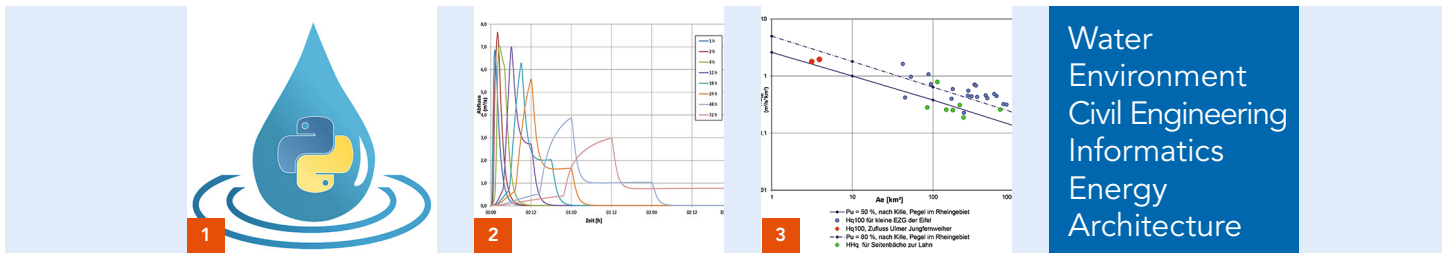## How much water must or can we expect?

We pursue answers to this crucial question for our public and private clients by using hydrological modeling tools – for everything from ponds to complex river basins. To do so, we use software developed in-house as well as third-party programs. We are currently focused on addressing the topics of climate change, dam and groundwater management, and flood protection and forecasting:

What levels of heavy rainfall runoff must we prepare for?

Heavy rains cause great damage in many communities. We calculate the occurrence of uncontrolled surface runoff with the heavy rainfall model RoGeR.

How much rainwater discharge can our stream cope with?

Rainwater discharge from urban areas amplifies flooding and impairs the water quality. We use VereNa modeling software to carry out simple or detailed tolerability verification in accordance with BWK M3/7.

How do we protect our city from flooding?

Efficient flood protection brings the costs and risks into balance. By determining flood areas and monetary damage values with KalypsoRISK, we develop effective protection concepts.

How much groundwater can we extract?

Withdrawals must not exceed the amount of groundwater recharge. We calculate the new formation with our water balance model WHMod.

Is our dam safe?

Flood retarding basins and dams must be inspected regularly in accordance with E-DIN 19700. For this purpose we use hydrological models such as NASIM.

Is a flood coming?

Water level forecasts help to avert damage and manage rivers more efficiently. With our HydPy modeling system, we create custom-fit forecast models.

We undertake these and many other tasks by working in collaboration with our experts from such fields as landscape planning, geohydrology, and software development, thus enabling us to achieve results at the cutting edge of science and technology.

1   Logo of the HydPy modeling system
2   HQ_{100} – Inflow waves
3   Centennial runoff rates HQ_{100} (and HHQ)
    for selected water-level gauges