

# EKLIPS3plus1

## Effizient und klimaresilient Planen mit 3 städtischen digitalen Zwillingen in 1 Region

### Abstract

EKLIPS3plus1 is a project funded by BMFTR (Bundesministerium für Forschung, Technologie und Raumfahrt) under the initiative „Planungsbeschleunigung für die Klimaanpassung mit Urbanen Digitalen Zwillingen“ (accelerating planning for climate adaptation with urban digital twins). The aim of the project is to develop urban twins for municipal urban land-use and landscape planning that will accelerate planning of climate adaptation measures for the three major cities of Remscheid, Solingen, and Wuppertal, together with the Wupperverband as the regional water management association. A platform will be built and tested that integrates specialist planning applications for spatial planning as well as climate, geo, and remote sensing data. Visualization options will be developed to communicate the results.

The challenges that will be addressed include infrastructure planning for rainwater management and drinking water, hydrological risk assessments, the urban heat island effect and changes in wind comfort. For the latter two the large-eddy-simulation model PALM4U will be integrated into the planning platform.

Freie Universität Berlin (FUB) leads module 6 and contributes to the project by preparing climate scenario data for the use in the digital twins (e.g., bias adjustments, downscaling). For this task methods that can be automated will be developed. Ensemble simulations of extreme precipitation events are conducted with a climate model at convection permitting resolution as input for hydrodynamic simulations. FUB will also conduct reference simulations with PALM4U.

Project duration: 1. 11. 2025 – 31. 10. 2029