Start MoRPHED model

Create new project file (.xml)

Load DEM (.tif)

Load hydrograph and sedigraph (.txt)

Option 1: specify sediment imbalance proportion (0-1)
Option 2: specify sediment import volume

Specify bed sediment path length distribution

Option 1: exponential distribution
Option 2: Gaussian distribution

Specify bank sediment path length distribution

Option 1: exponential distribution
Option 2: Gaussian distribution

Specify thresholds and grain size

- Bank erosion shear threshold
- Bank erosion slope threshold
- Bank erosion area threshold
- Reach-average grain size

Specify Delft3D parameters

- Simulation time
- Simulation timestep
- Eddy viscosity
- Roughness

Save project file (.xml)

Run MoRPHED model

Loop through all events

Compute hydraulics (Delft3D)

Compute bank erosion/transport/deposition

Compute bed erosion/transport/deposition

Import sediment

Update DEM

Save for each event:
- Updated DEM
- Event and cumulative DoDs
- Bed erosion/deposition rasters
- Bank erosion/deposition rasters

Legend

Computational task

File generation

User-input file

User-input parameter