Massive Parallelization of the Global Hydrological Model mHM

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Parallelizing river networks with MDF: MPI parallelized Decomposition of Forests

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- run sub-domains in parallel
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- Bottleneck: the longest subriver (*tree depth*)
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MPI: communication between nodes

OpenMP: parallelization inside nodes
Parallelizing global setups
parallelization scheme

Layer 1
MPI

Layer 2
MDF + MPI

Layer 3
OpenMP

ET & TWSA

 MPIcom 1

 MPIcom i

 MPIcom i+1

 MPIcom n

 Q

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Parallelizing river networks
example: Danube