
HPC: Opportunities and Constraints for a Small Enterprise

by

Dr. Christian Tognacca

beffa tognacca ldt. - Claro, Switzerland

Our Activities

- Hydraulics
- Hydrology
- River Mechanics
- Morphology
- Natural risks

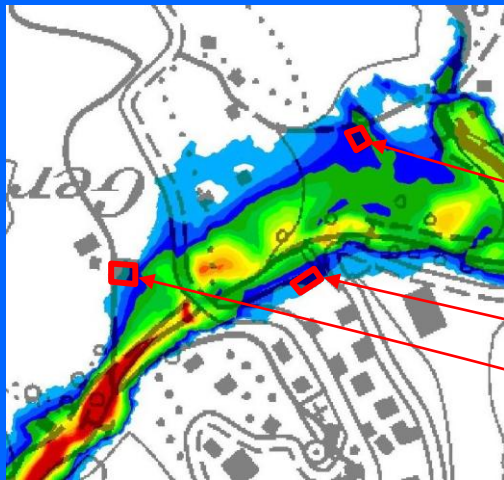


Our Firm

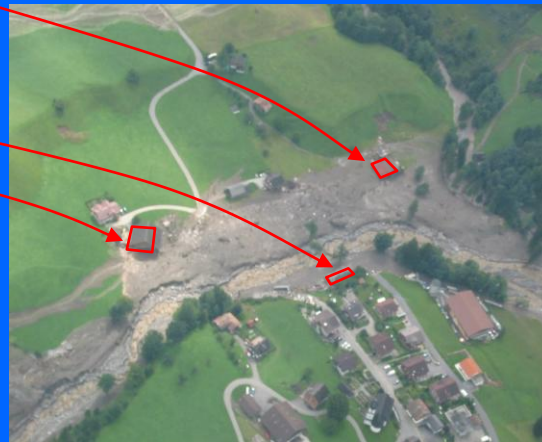
- Very small enterprise (three collaborators)
- Highly specialised
- Strong link to universities and research work
- Both public and private clients (with increasing expectations and needs)
- Commercial jobs
- Teaching activities and publications

Our Numerical Simulation Tools

- Numerical codes for 1D and 2D hydrodynamical simulations and for risk analysis
- Self-development (one of our strenghts), partially within the frame of commercial jobs

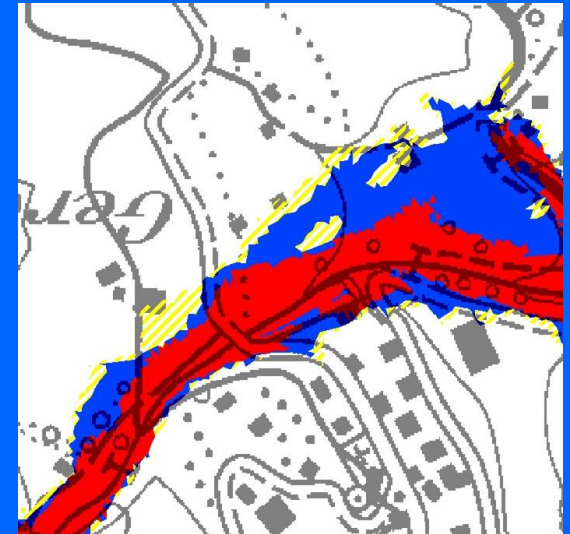


Simulated



Observed

Risk analysis and protection measures



Opportunities from HPC

- Improvement of our competitiveness increasing the computational capabilities
 - speed of numerical processes: parallelisation
 - number of cores: stocastical analysis
- Contribution to scientific progress
 - better description of natural phenomena
- HPC-capabilities and possibilities are fascinating and we would like to invest more time in development activites

Constraints and Limits

- Limited time capacities of our staff
 - Allocation of time and resources in research and development activities is difficult
- Daily project-activities are full absorbing, the pressure of the market is big (time and money)
- HPC-capabilities are not (yet?) a vital issue for our business