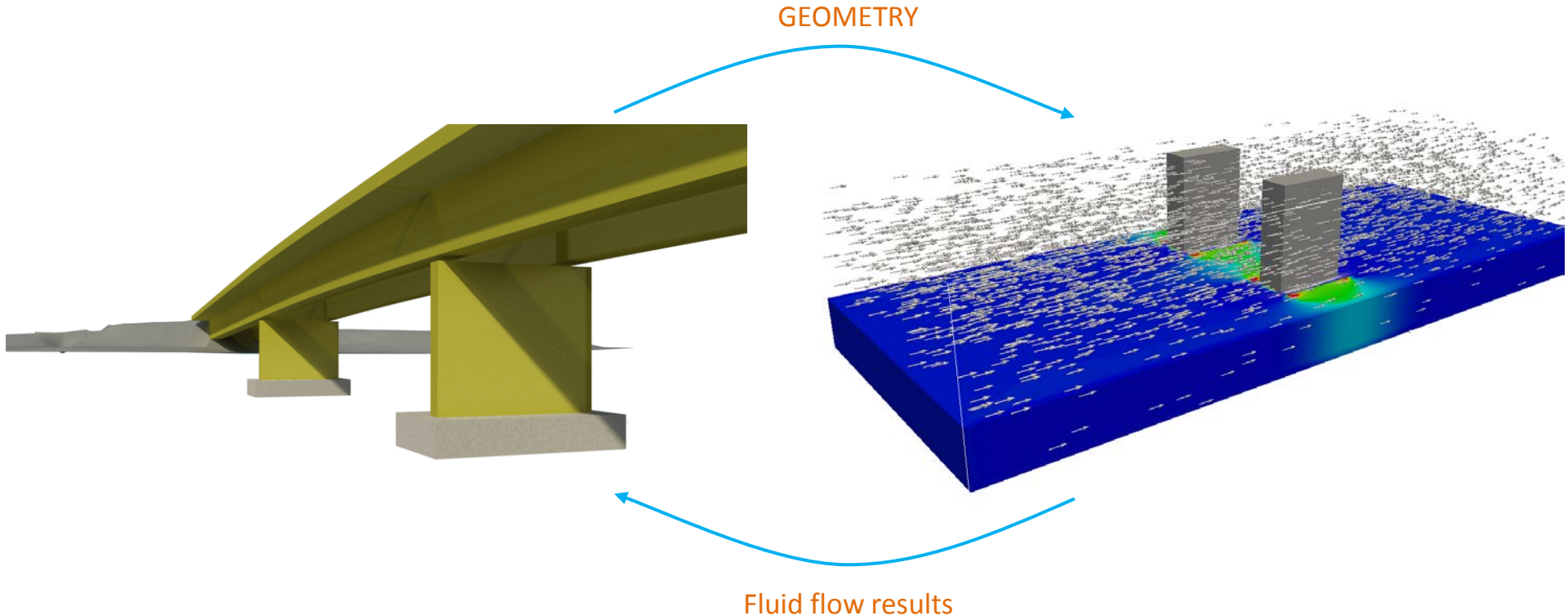
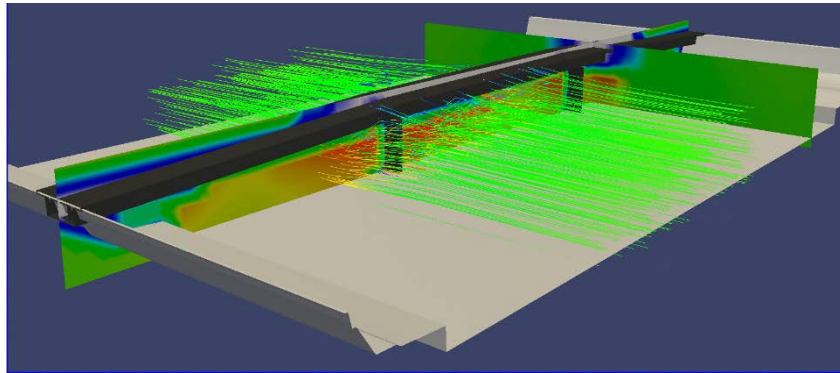


## Bridge design: Coupling KBE and CFD models

- Knowledge-Based Engineering (KBE) systems are applied for rule-based infrastructure planning.
- For bridge design, based on Computational Fluid Dynamics (CFD) computations, a bi-directional coupling of KBE and CFD applications is necessary



## Bridge design: Coupling KBE and CFD models



### Project Characteristics

Mechanics: ★★☆☆☆  
Mathematics: ★★☆☆☆  
Programming: ★★★★★

- **Your Task:**

- Getting familiar with Autodesk Revit, Dynamo and CFD Code
- Implementation of a BRep bridge model to CFD voxel model mapping
- Implementation of bi-directional information transfer btw. KBE and CFD application
- Simulation of fluid flow parameters under the bridge
- Implementation of CFD response-methods in the KBE system

- **Programming language:** C++, C#

 **OBBERMEYER**

- **Supervisor**

- Nevena Perovic, Chair of Computation in Engineering, [nevena.perovic@tum.de](mailto:nevena.perovic@tum.de)
- Dominic Singer, Chair of Computational Modeling and Simulation, [dominic.singer@tum.de](mailto:dominic.singer@tum.de)