Investigation of the flow in the piping system of a pelton test rig

Description:
In order to fulfil the demands of a national research cooperation with a turbine manufacturer, the pelton test rig of the Institute of Energy Systems and Thermodynamics needs to be adapted. The main task of this subproject is to investigate the flow in the current piping system and compare it to the new design (will be provided). The aim of the simulations is to find spots in the systems, where the flow is affected negatively and deduce methods to provide a evenly distributed flow field for the turbine.

Key topics:
- Simulation of the flow in the existing piping system
- Comparison to the new design
- Verification of pressure losses by means of analytical calculation
- Decision if additional installations (e.g. flow straightener) are necessary

Desired skills:
- Basic knowledge of fluid mechanics (Bernoulli’s eqn.)
- Affinity to working on conducting simulations and interest in CFD
- Interest in participating in a multidisciplinary research project

Contact:
Univ.Ass. Dipl.-Ing. Franz Hahn, +43(1)58801 302414, franz.hahn@tuwien.ac.at