As a reliable partner for 150 years, Voith Hydro offers everything needed for the efficient and future-oriented creation of hydropower. The portfolio includes all components for large and small hydropower plants as well as for pumped storage power plants - from generators, turbines, pumps and automation systems to spare parts, maintenance and training services as well as digital solutions for the entire life cycle of the plants.

Your Context

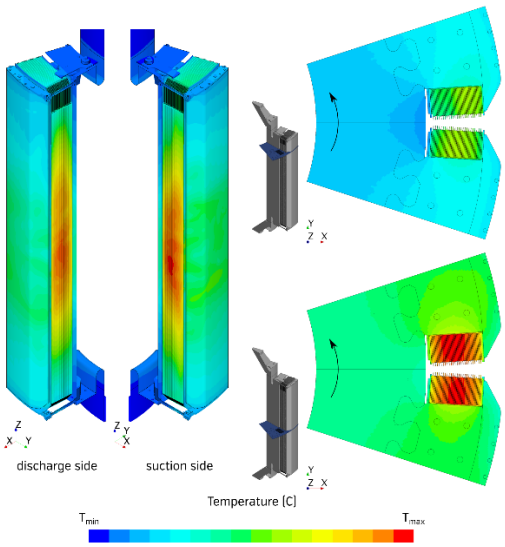

Figure 1: Conjugate Heat Transfer Simulation of heat and fluid flow in hydropower generator [1]

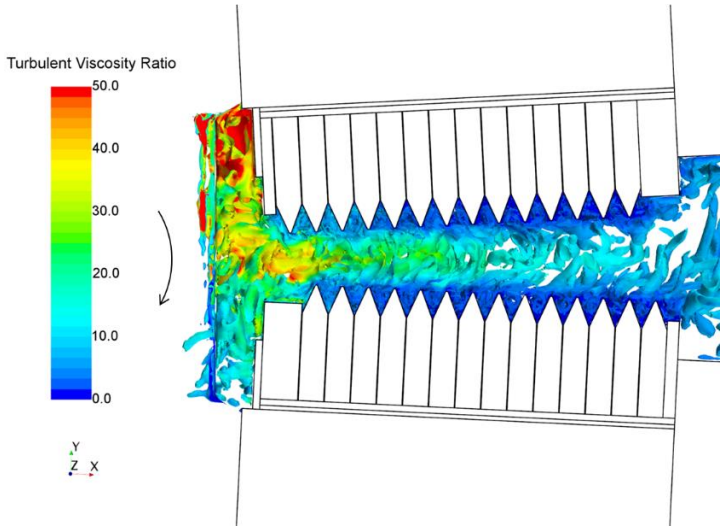

Figure 2: Vortex structures in pole gap of hydropower generator [2]

Voith Hydro generators are core components within the Voith Hydro product portfolio. Whereas turbines and pumps are directly associated with fluids in turbomachinery, it doesn't seem to be relevant to generators at first sight. However, the opposite is true: For the aerothermal design of generators, it is vitally important. Hydropower generators are usually cooled by air, water or hydrogen, realized by thermodynamic cooling cycles. CFD, High Performance Computing, process automation and applied numerical optimization accelerated by AI are the essential methods employed in the development phase.

Your Contribution

In the department "Fluid Mechanics" within the Central Technology development of Voith Hydro methods and tools are developed. They enable our product designers to create new state-of-the-art generators and motor-generators. As an intern or graduand (Bachelor or Master) you develop these methods & tools together with our experts.

What you can expect

- Support from your mentor and team to help you get started.
- Job counseling and regular feedback for your professional and personal development.
- Exciting work opportunities and individual projects that provide you with insights into the operation of an international company.
- Flexible working hours and attractive compensation.
- Being part of our trainee network and staying in contact with other trainees through regular meetings.

Your Profile

Are you interested in turbomachinery design, CFD, method development, High-Performance-Computing, optimization, AI and / or code development? You want to gain an internal view into the everyday life of industrial method development? This is your opportunity!

In case of additional questions, feel free to reach out to

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[1] Diebel, B., Walter-Krause, A., Adam, M., Hildinger, T., Jester-Zürker, R.: „Modern Approaches for the Thermal Design of High Rotational Speed, Air-Cooled Hydro Motor-Generators“, CIGRE: Colloquium on new development of rotating electrical machines, Paris, France, 2020
[2] Walter-Krause, A.: “Application of Conjugate Heat Transfer Simulations for the Development of Ventilation and Cooling Systems for Large Hydro Generators”, XIII International Conference on Electrical Machines (ICEM), Alexandroupoli, 2018