



Technical Sessions (Tuesday Morning, September 18)

Tuesday Morning (September 18) 10:10 - 12:10

Hydraulic Turbines 5 (RY202)

Chairs: Dr. Shogo Nakamura (Voith Fuji Hydro K.K., Japan), Prof. Pavel Rudolf (Brno University of Technology, Czech)

[IAHR2018-098](#) **“Physical mechanisms of inter-blade vortex development inside blade channels at deep part load operation of Francis turbines”**, Keita Yamamoto (EPFL, Switzerland), Andres Muller (Nippon Koei Co., Ltd., Japan), Arthur Favrel (EPFL, Switzerland), Christian Landry (Power Vision Engineering Sarl, Switzerland), Francois Avellan (EPFL, Switzerland)

[IAHR2018-074](#) **“Radial Dampers Impact on Shaft Vibrations at Resonance”**, Rolf Gustavsson (Vattenfall AB, Sweden), Mattias Nasselqvist (Vattenfall AB, Sweden), Jens Osterud (Vattenfall AB, Sweden)

[IAHR2018-082](#) **“Francis turbine with tandem runners: a proof of concept”**, Romeo F. Susan-Resiga (Politehnica University Timisoara, Romania), Adrian Stuparu (Politehnica University Timisoara, Romania), Sebastian Muntean (Romanian Academy - Timisoara Branch, Romania)

[IAHR2018-088](#) **“Numerical Investigation of the Behavior of the Cavitation Rope in a Francis Turbine with Vortex-Control Grooves”**, An Yu (Hohai University, China), Daqing Zhou (Hohai University, China), Huixiang Chen (Hohai University, China)

[IAHR2018-090](#) **“Development of Wide Operating Range Runner for Francis Turbine Upgrading”**, Jiri Obrovsky (Litostroj Power - CKD Blansko Engineering, a.s., Czech), Josef Zouhar (Litostroj Power - CKD Blansko Engineering, a.s., Czech), Martin Abraham (Litostroj Power - CKD Blansko Engineering, a.s., Czech), Ales Skotak (Litostroj Power - CKD Blansko Engineering, a.s., Czech)

[IAHR2018-429](#) **“Construction of the Reduced Order Dynamic Model for Swirling Flow Control in Hydraulic Turbine Draft Tube”**, Pavel Rudolf (Brno University of Technology, Czech), Ondrej Urban (Brno University of Technology, Czech), David Stefan (Brno University of Technology, Czech)