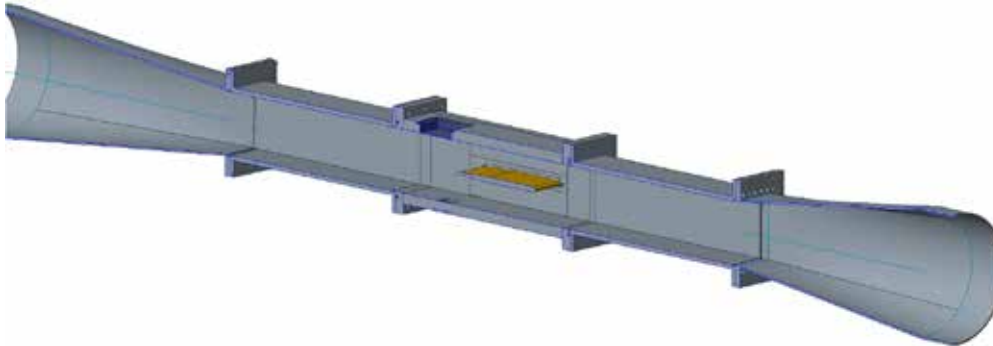


Background

The blades of high head Francis turbines are exposed to high frequency fatigue loads due to Rotor-Stator interactions. Modern runner blades are made to be thin, increasing the efficiency, but making the runner susceptible to vibration.

The aim of this thesis is to better understand how the runner blades behave when subject to vibration, and how it affects the runner's lifetime. The thesis will also investigate how the dynamic properties of a simplified runner blade change with changing water velocity.



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Dynamic response of
Francis turbine blades

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