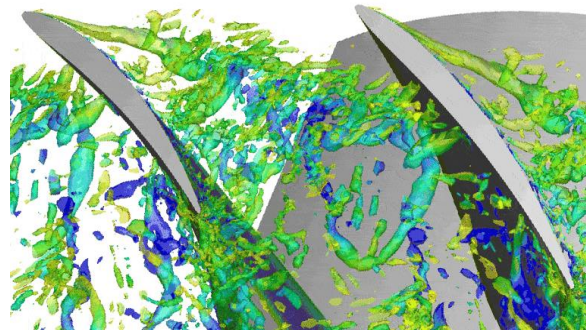
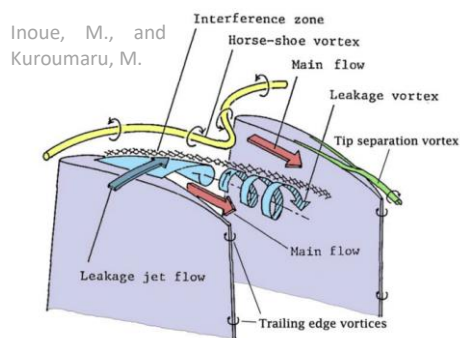


Compressor is an essential component in aircraft engines, gas turbines, automotive turbochargers, etc. Its aerodynamic performances are highly relevant to the tip leakage flow structure featuring 3D swirling motion and adverse pressure gradient. The aim of this project is to advance the understanding of the aerodynamics of tip leakage flow via hybrid RANS/LES simulations. Sensitivities of each factors affecting the tip leakage flow will be analyzed by conducting a parametric study. The student engaged in this project is expected to gain hands-on experience in turbomachinery and industrial-level CFD tools.

The test cases which will be used for this study are (<https://www.gpps.global/data-sets.html>)  
TUDa-GLR-OpenStage

Beihang University: Low Speed Stage-A



LES  
low-speed axial rotor,  $Re_{\tau} = 7.5 \times 10^5$