



Workshop: „Numerical calculation of turbomachinery flows” (20 hours)

By Prof. Dr. Andrey Rusanov (IPMach NANU, Kharkov, Ukraine)

The workshop is planned to be an advanced lecture series guiding students towards high-quality research work of turbomachinery flow environment using methods of CFD (Computational Fluid Dynamics). Subsequent topics include fundamentals of CFD for turbomachinery applications and specific problems of multi-purpose turbines and compressors. The final track provides a hands-on experience with the code Flower (IPMFlow) for calculation of turbomachinery flow systems. The workshop is dedicated for PhD students of mechanical engineering as well as heat and power engineering.

Workshop Overview:

Track I: Introduction to numerical calculations of turbulent flow in turbomachinery (5 hours):

1. Governing equations.
2. Closure equations.
3. Flow turbulence.
4. Discretisation of equations.
5. Perfect and real gas.

Track II: Turbine flow calculations (5 hours):

1. Steam, gas and ORC turbines.
2. Axial turbines.
3. Radial and radial-axial turbines

Track III Compressor flow calculations (5 hours):

1. Axial compressors.
2. Radial-axial compressors.

Track IV: Application of package Flower (IPMFlow) to calculation of turbomachinery flows (5 hours):

1. Flow system geometry.
2. Calculation grids.
3. Calculation process.
4. Post-processing.



KAPITAŁ LUDZKI
NARODOWA STRATEGIA SPÓJNOŚCI

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TERMINY WARSZATÓW			
Data	Dzień tygodnia	Godzina	Sala
2015-07-20	Pn	9.00-14.00	115 IMP PAN (ul. Fiszera 14)
2015-07-21	Wt	9.00-14.00	115 IMP PAN (ul. Fiszera 14)
2015-07-22	Śr	9.00-14.00	115 IMP PAN (ul. Fiszera 14)
2015-07-23	Cz	9.00-14.00	115 IMP PAN (ul. Fiszera 14)