Institute of Thermomechanics Seminar
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# Lecture No. 107

**Czech Society for Mechanics and Institute of Thermomechanics, CAS**

invite you to a research seminar

# On spatio-temporal analysis of turbulent wake behind a circular cylinder

given by


Prof. Václav Uruba

Institute of Thermomechanics, CAS, v.v.i.

and

Faculty of mechanical engineering, University of West Bohemia



The method of spatio-temporal analysis of data is to be presented. The Oscillation Pattern Decomposition (OPD) method is intended for turbulent data analysis containing both random and pseudo-periodical parts. The method is based on approach defined by prof. Hasselmann for meteorological data Principal Oscillation Pattern (POP) employing Fokker-Planck evolution equation. An example of analysis of turbulent wake behind a circular cylinder will be presented. The three modes with corresponding frequencies characterized by Strouhal numbers 0.2, 0.4 and 0.6 respectively representing turbulence harmonic contents are to be shown.


**References:**


Hasselmann, K., PIPs and POPs: The Reduction of Complex Dynamical Systems Using Principal Interaction and Oscillation Patterns, J of Geophysical Research, vol. 93, no. D9, pp 11,015-11,021, September 20, 1988.

Uruba, V., Near wake dynamics around a vibrating airfoil by means of PIV and Oscillation Pattern Decomposition at Reynolds number of 65000, Journal of Fluids and Structures 55 (2015) pp 372–383.


**The lecture will be held on Wednesday, December 15, 2021 at 13:00**
**in the building of the Institute of Thermomechanics (large lecture room),**
**Dolejškova 5, 182 00 Prague 8**

Contact persons: Radek Kolman, Hanuš Seiner