



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

invite you to a lecture and discussion within
the lecture series **Institute of Thermomechanics Seminar**

**Brief introduction to optimization
and topology optimization**
given by

Dr. Paulo Salvador Britto Nigro

Software Developer and Researcher of Virtual.PYXIS optimization,
São Paulo, Brazil

The lecture will address the following topics in Topology Optimization (OT):

- Type of Optimizations – a shortly review of several case of optimizations methods, as parametric and shape optimization;
- Topology Optimization – introduction to basic concepts of OT, as material law and Filter;
- Topology Optimization Software – The concept how the software works;
- Design Response – Principal tools of the software: Compliance, Frequency, Volume, Mass, Displacement and Internal Force;
- Manufacturing tools - Symmetry, Casting and Extrude;
- Objective function Definition – options to deal with multi-objective functions, as minmax and KS functions;
- Nonlinear Optimization Methods- An explanation of nonlinear optimization with equality and inequality constraint;
- Method of Explicit Convex Approximation – Introduction to OC and MMA.

Dr Paulo Salvador Britto Nigro is a Software Developer skilled in Numerical Simulation applied to computer simulation industry. He has strong background in Model Order Reduction, Nonlinear Optimization Methods and C++. Doctor of Philosophy (Ph.D.) focused in Structural Engineering from Universidade de São Paulo.

**The lecture will be held on Wednesday, March 28, 2018 at 14:00 in the building
of the Institute of Thermodynamics (lecture room B), Dolejškova 5, 182 00 Prague 8**

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