



Lecture No. 126

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

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

Sound attenuation by dynamically space-time modulated diffraction grating

given by

Dr. Arkadi Berezovski

Department of Cybernetics, School of Science, Tallinn University of Technology, Estonia
Institute of Thermomechanics, v.v.i., CAS, Prague

Sound wave propagation through a rigid space-time modulated diffraction grating in air is studied numerically. It is demonstrated that complete sound isolation may be achieved in the idealized scenario by instantaneously altering the location of the grating. The influence of sound wave frequency and the grating location alteration period on the process is investigated. The interpretation of the spatiotemporal modulation of the rigid square grating as the rotating elements of the grating by 90 degrees counterclockwise and back offers a possible practical realization of the dynamic device.

**The lecture will be held on Wednesday, September 11, 2024 at 11:00
in the building of the Institute of Thermomechanics (large lecture room),
Dolejškova 5, 182 00 Prague 8**