

סמינר - SEMINAR

הנדך מוזמנת להרצאה סמינריונית של הפקולטה להנדסת מכונות, שתתקיים ביום ב' 18.12.2017 (ל' בכסלו, תשע"ח), בבניין דן קאהן, אודיטוריום 1, 14:30.

מרצה:

Assist. Prof. Luca Biancofiore

Department of Mechanical Engineering
Bilkent University, Bilkent, Ankara, Turkey

על הנושא:

The kernel wave perspective: from geophysics to engineering

The seminar will be given in English

להלן תקציר ההרצאה:

Within the geophysical sciences, shear instability is known to be an important cause of turbulence and mixing in the atmosphere and oceans. A linear stability analysis is often used to determine whether small perturbations applied to the flow will grow in time. However, the results of stability analyses can often be non-intuitive, and one would hope that a consistent physical interpretation of instability can help to explain these results. One such physical interpretation, i.e. the kernel wave perspective, is based on the idea that two otherwise stable waves that exist in the flow may interact to produce instability. In this seminar, this physical interpretation is taken away from its natural habitat, i.e. from geophysical sciences, and exploited for industrial purposes. In particular, it is used to improve the design of the injectors of rockets engines where the combustion efficiency is strictly connected with the quality of the mixing between gaseous H₂ and liquid O₂. The kernel wave perspective helps us in explaining (i) why adding a recess to these injectors the mixing significantly improves and (ii) the counterintuitive destabilizing effect of the surface tension at the interface between these two fluids

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מרכז הסמינרים