

סמינריון

הנדך מוזמן/ת להרצאה סמינריונית של הפקולטה להנדסת מכונות שתתקיים ביום ד'

30.09.2020 (י"ב בתשרי, תשפ"א), בשעה 13:30 באמצעות הזום :

<https://technion.zoom.us/j/93524435556>

מרצה : מקס שקטרוט

מנחה : פרופסור סטיבן פרנקל

על הנושא :

Numerical Simulations of Aerodynamic Flows: Deep Reinforcement Learning for Active Flow Control using High-Order Unstructured Grids and GPU Accelerated Simulations using Meshless Methods

The seminar will be given in English

תקציר ההרצאה :

In this presentation, I will report on my efforts to perform numerical simulations of compressible aerodynamic flows using two different computational fluid dynamics (CFD) approaches. The first approach employs the open-source code PyFR which is a high-order body-fitted unstructured grid flux-reconstruction code. This code is used to perform two-dimensional simulations of flow over a cylinder and a NACA-0018, the later with steady blowing for active flow control. A recently published deep reinforcement learning (DRL) method is explored for the NACA-0018 to perform closed-loop active flow control to optimize aerodynamic performance. The second approach employs a meshless method for solving the compressible Navier-Stokes equations. The code was written from scratch in CUDA C programming language and runs very efficient on NVIDIA GPU's. A variety of airfoils and conditions are simulated with comparisons to previously measured or simulated data.

בברכה,

פרופ"מ מתי סאס

מרכז הסמינרים