

הנדך מוזמן/ת להרצאה סמינריונית של הפקולטה להנדסת מכונות, שתתקיים ביום ד' 17.01.2018 (א' בשבט, תשע"ח), בניין דן-קאהן, אודיטוריום 1, 13:30.

מרצה: מעין אהרונוביץ'

מנחה: פרופ' שאול גוטמן

על הנושא:

Impact Time in Vector Guidance

The seminar will be given in Hebrew

להלן תקציר ההרצאה:

The use of multiple pursuers to strike a target simultaneously can increase the likelihood of a successful interception. Using such coordination can both overwhelm the defensive capabilities of the target and mitigate the negative side-effects of multiple impacts. One example of an unwanted side-effect of multiple strike times includes explosion residue blocking the direct view of the target at a critical moment. In missile guidance, a simultaneous interception can be achieved by timing all pursuers to strike at a common impact time through adjustments to the guidance law.

To achieve interception of a target at a non-minimum time while using the optimal guidance laws, the thrust magnitude must be lowered. Lowering the thrust requires a propellant capable of real-time thrust adjustments, such as liquid or gel propellants (adjustable thrust). Today, most tactical missiles use solid propellants which have a predetermined thrust profile and are impossible to regulate online (constant thrust).

In this seminar, a Vector Guidance (VG) approach for the impact time conflict is presented for both Bounded Control and Linear Quadratic (LQ) Control. The impact time guidance is first formulated for a missile with an adjustable thrust (liquid or gel propellants). Afterwards, multiple solutions are discussed for a missile with a constant thrust (solid propellant). Lastly, a comparison will be made between the Bounded and LQ control.

בברכה,

ד"ר איתי סאס
מרכז הסמינרים