**DII Seminar**



# Compound matrices in systems and control theory

February 20th 2024, h. 14:00 - Online seminar

**Speaker**: **Prof. Michael Margaliot (Tel Aviv University)**

We review the k-multiplicative and k-additive compounds of a matrix. We then describe some applications to the asymptotic analysis of non-linear time-varying dynamical systems described by ODEs. These include k-cooperative systems, totally positive differential systems, k-contractive systems, and contraction theory in the Hausdorff dimension.

**Bio**: Michael Margaliot received the BSc (cum laude) and MSc degrees in Electrical Engineering from the Technion-Israel Institute of Technology-in 1992 and 1995, respectively, and the PhD degree (summa cum laude) from Tel Aviv University in 1999. He was a post-doctoral fellow in the Dept. of Theoretical Mathematics at the Weizmann Institute of Science. In 2000, he joined the Dept. of Electrical Engineering-Systems, Tel Aviv University, where he is currently a Professor. Dr. Margaliot's research interests include the stability analysis of differential inclusions and switched systems, optimal control theory, computation with words, Boolean control networks, contraction theory, totally positive differential systems, the applications of compound matrices in systems and control theory, and systems biology.