1163-94-841   **Akram Aldroubi*** (`akram.aldroubi@vanderbilt.edu`), **Shiying Li** (`sl8jx@virginia.edu`) and **Gustavo Rohde** (`gr2z@virginia.edu`). *Partitioning signal classes using transport transforms for data analysis and machine learning.*

A relatively new set of transport-based transforms (CDT, R-CDT, LOT) have shown their strength and great potential in various image and data processing tasks such as parametric signal estimation, classification, cancer detection among many others. In this talk we give an overview of the transport transforms and their relations to transport theory. We then provide conditions under which classes of signals that are created by algebraic generative models are transformed into convex sets by the transport transforms. Such convexification of the classes simplify the classification and other data analysis and processing problems when viewed in the transform domain. (Received September 13, 2020)