Abstract: The talk will address the problem of solving an underdetermined system of linear equations where the unknown vector is assumed to be sparse. A brief overview of popular greedy pursuit algorithms, for solving the sparse recovery problem, like Orthogonal Matching Pursuit (OMP), Subspace Pursuit (SP) will be presented. It has been observed that the performance of these greedy pursuit algorithms depends on the nature of the elements of the sparse vector. Motivated by this, a fusion framework is proposed, which employs multiple sparse reconstruction algorithms to improve the performance. Examples of such fusion algorithms are FACS, COMMACS. Further, an iterative framework (IFSRA), to improve the performance of any arbitrary sparse reconstruction algorithm using subspace properties will be presented. A theoretical analysis, based on the RIP properties of the measurement matrix, of the proposed schemes and conditions for performance improvement will be presented, supported by numerical simulations.

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