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Akram Aldroubi* (akram.aldroubi@vanderbilt.edu), Dept. of Math. 1520 SC, Vanderbilt University, Nashville, TN 37240. *The subspace clustering problem and its application to motion tracking in video.*

The subspace clustering problem is a dimensionality reduction problem that has applications in movement tracking in video sequences and in facial recognition for example. It also has connections to many areas of mathematics, computer science and engineering such as the Generalized Principle Component Analysis (GPCA), learning theory, compressed sensing, and sampling with finite rate of innovation. In this talk, we will state the problem, present some mathematical results and algorithms for solving it, and show how its solution can be used to track moving objects in video sequences. (Received August 02, 2010)