## 1171-16-206Daniel B Kline\* (dkline@cofo.edu) and Calin Chindris (chindrisc@missouri.edu).Simultaneous Robust Subspace Recovery and Semi-Stability of Quiver Representations.

We consider the problem of simultaneously finding lower-dimensional sub-space structures in a given m-tuple of possibly corrupted, high-dimensional data sets all of the same size. We refer to this problem as simultaneous robust subspace recovery (SRSR) and provide a quiver invariant theoretic approach to it. We show that SRSR is a particular case of the more general problem of effectively deciding whether a quiver representation is semi-stable (in the sense of Geometric Invariant Theory) and, in case it is not, finding a subrepresentation certifying in an optimal way that the representation is not semi-stable. In this paper, we show that SRSR and the more general quiver semi-stability problem can be solved effectively. (Received August 10, 2021)