

1167-16-213

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MO. *Simultaneous robust subspace recovery and semi-stability of quiver representations.*

We consider the problem of *simultaneously* finding lower-dimensional subspace structures in a given m -tuple $(\mathcal{X}^1, \dots, \mathcal{X}^m)$ 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 March 07, 2021)