

Approaches to robust multivariate estimation based on projections

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Projections are a useful tool to construct robust estimates of multivariate location and scatter with interesting theoretical and practical properties. In particular: the estimate proposed by Stahel (1981) and Donoho (1982), which was the first equivariant estimate with a high breakdown for all dimensions; Estimates with a maximum bias independent of the dimension, proposed by Maronna, Stahel and Yohai, (1992) for scatter and by Tyler (1994) for location, also studied by Adrover and Yohai (2002); and two recent fast proposals for high-dimensional data: one by Peña and Prieto (2001) based on the kurtosis of projections, and another by Maronna and Zamar (2002) based on pairwise robust covariances. Results and relationships among these estimates will be reviewed.

References

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