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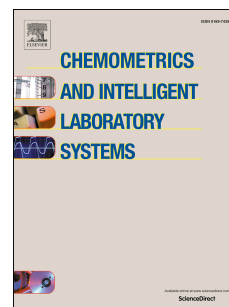
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Sparse N-way Partial Least Squares with R Package sNPLS

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Abstract

We introduce the **R** package **sNPLS** that performs *N*-way partial least squares (*N*-PLS) regression and Sparse (L1-penalized) *N*-PLS regression in three-way arrays. *N*-PLS regression is superior to other methods for three-way data based in unfolding, thanks to a better stabilization of the decomposition. This provides better interpretability and improves predictions. The sparse version also adds variable selection through L1 penalization. The sparse version of *N*-PLS is able to provide lower prediction errors and to further improve interpretability and usability of the *N*-PLS results. After a short introduction to both methods, the different functions of the package are presented by displaying their use in simulated and a real dataset.

Keywords: *N*-PLS, LASSO, Sparse matrices

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