

ROOT SYSTEMS IN MODERN STATISTIC

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ABSTRACT

Root systems appear surprisingly in the geometrical analysis of penalized estimators, LASSO and SLOPE. A_1^p -convex hulls appear and play a big role for LASSO penalty. B_p -convex hulls appear and play a big role for SLOPE penalty, introduced in 2015 by Bogdan, van den Berg, Sabatti, Su and Candès.

We shall present briefly the estimators LASSO and SLOPE, discuss their model recovery properties and their relations with root system-induced convex hulls. This talk is based on the joint research with P. Graczyk, M. Bogdan, B. Kołodziejek, P. Tardivel and M. Wilczyński.

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