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	Titolo	Estimation and testing under sparsity [e-book] : École d'Été de Probabilités de Saint-Flour XLV – 2015 / by Sara van de Geer
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	Descrizione fisica	1 online resource (xiii, 274 p.)
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	Nota di contenuto	1 Introduction ; The Lasso ; 3 The square-root Lasso ; 4 The bias of the Lasso and worst possible sub-directions ; 5 Confidence intervals using the Lasso ; 6 Structured sparsity ; 7 General loss with norm-penalty ; 8 Empirical process theory for dual norms ; 9 Probability inequalities for matrices ; 10 Inequalities for the centred empirical risk and its derivative ; 11 The margin condition ; 12 Some worked-out examples ; 13 Brouwer's fixed point theorem and sparsity ; 14 Asymptotically linear estimators of the precision matrix ; 15 Lower bounds for sparse quadratic forms ; 16 Symmetrization, contraction and concentration ; 17 Chaining including concentration ; 18 Metric structure of convex hulls
	Sommario/riassunto	Taking the Lasso method as its starting point, this book describes the main ingredients needed to study general loss functions and sparsity-inducing regularizers. It also provides a semi-parametric approach to establishing confidence intervals and tests. Sparsity-inducing methods have proven to be very useful in the analysis of high-dimensional data. Examples include the Lasso and group Lasso methods, and the least squares method with other norm-penalties, such as the nuclear norm. The illustrations provided include generalized linear models, density estimation, matrix completion and sparse principal components. Each chapter ends with a problem section. The book can be used as a textbook for a graduate or PhD course