

« CHAIRE ANDRÉ AISENSTADT 2009 — UNE SÉRIE DE CONFÉRENCES »
14–18 SEPTEMBRE 2009

“ANDRÉ AISENSTADT CHAIR 2009 — A SERIES OF LECTURES”
SEPTEMBER 14–18, 2009

Super-resolution with sparsity

STÉPHANE MALLAT

CMAP
École Polytechnique
91128 Palaiseau Cedex
FRANCE

`stephane.mallat@polytechnique.fr`

Inverse problems aim at inverting some operator and hopefully restore signal structures that have nearly disappeared. Super-resolution is about recovering signals of higher resolution than the input data, using prior information on the signal properties. Sparse representations can provide strong prior information to improve resolution, in sufficiently “incoherent” dictionaries. Applications to geophysics, image deconvolution and super resolution interpolations illustrate these results.