

# Edge preserving random tree Besov priors

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We propose alternatives for Bayesian a priori distributions that are frequently used in the study of inverse problems. The aim is to construct priors that have same kind of good edge-preserving properties than total variation or Mumford-Shah but correspond to well defined infinite dimensional random variables and can be approximated with finite dimensional random variables. This is done by introducing a new random variable  $T$  that takes values in the space of ‘trees’, and which is chosen so that the realisations of the unknown have singularities only on a small set.