

Total Generalized Variation with Finite Elements and Applications

Roland Herzog¹

The total variation (TV) semi-norm is popular as a regularizing functional in inverse problems and imaging, favoring piecewise constant functions with few jumps. As an extension, Bredies, Kunisch and Pock introduced the total generalized variation (TGV) which favors piecewise linear (or higher-order polynomials). In this presentation, we address the discretization of second-order TGV with appropriate families of finite element functions. Moreover, we discuss algorithms for the numerical solution of associated imaging problems and show numerical results.

¹Heidelberg University
roland.herzog@iwr.uni-heidelberg.de