Abstract

We consider regularized solutions of linear inverse ill-posed problems obtained with generalized Tikhonov-Phillips functionals with penalizers given by linear combinations of seminorms induced by closed operators. Convergence of the regularized solutions is proved when the vector regularization rule approaches the origin through appropriate radial and differentiable paths. Characterizations of the limiting solutions are given. Finally, a examples of image restoration using generalized Tikhonov-Phillips methods with convex combinations of seminorms are shown.