

# Gradient methods with regularization for constrained optimization problems and their complexity estimates

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## Abstract

© 2017 Informa UK Limited, trading as Taylor & Francis Group We suggest simple implementable modifications of conditional gradient and gradient projection methods for smooth convex optimization problems in Hilbert spaces. Usually, the custom methods attain only weak convergence. We prove strong convergence of the new versions and establish their complexity estimates, which appear similar to the convergence rate of the weakly convergent versions. Preliminary results of computational tests confirm efficiency of the proposed modification.

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## Keywords

complexity estimates, conditional gradient method, Convex optimization, gradient projection method, Hilbert space, strong convergence