1113-34-243     **Alexandra Smirnova**, **Maia Martcheva** and **Hui Liu\*** (`hui109482@gmail.com`). *On Generalized Cross Validation for Regularization Parameter Selection in the Model of Plasmodium falciparum Malaria.*

We study advantages and limitations of the Generalized Cross Validation (GCV) approach for selecting a regularization parameter in the case of a partially stochastic linear irregular operator equation. The research has been motivated by an inverse problem in epidemiology, where the goal was to reconstruct a time dependent treatment recovery rate for Plasmodium falciparum, the most dangerous form of malaria. Initial numerical simulations gave rise to a theoretical analysis of the expected value of the GCV function and the efficiency of the GCV method for different noise levels. It was shown that, as opposed to L-curve, the GCV does not necessarily generate a systematic error in the value of the regularization parameter for Tikhonov's stabilizing algorithm. (Received August 24, 2015)

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