doc. Ing. Filip Šroubek, Ph.D. ^{ÚTIA AV ČR}

Solving the inverse problem of fast moving objects Abstract

Fast moving objects appear in videos as blurred streaks blended with the background. Tracking such objects in full 6 degrees of freedom, i.e. estimating 3D motion trajectory and 3D pose, and simultaneously estimating object appearance leads to an interesting inverse problem that comprises deblurring, matting and curve fitting. The talk will cover the image formation model of fast moving objects, formulation of the optimization problem with specific regularization terms, and the proposed numerical solution of the inverse problem. Limitations and weaknesses of the proposed method will be discussed and performance will be illustrated on real videos.