
The method of blurred images recovery by two frames

© T.V. Krapchatova, M.V. Filippov

Bauman Moscow State Technical University, Moscow, 105005, Russia

Images, obtained during the aerial surveys at high speeds of aircraft and at low altitudes are almost always degraded by motion blur. Usually aerial photography is made with overlap, which allows using multiple frames to improve image quality. This paper proposes a method of restoring blurred images based on two frames. Iterative image reconstruction is performed in a separate step by the conjugate gradient method with regularization. The results confirm the improvement in quality compared with the recovery from a single image, since it can restore the frequencies that are lost as a result blurring.

Keywords: *aerial photography, image restoration, motion blur, noise, autocorrelation, point spread function, regularization, bilateral filtering.*

Krapchatova T.V., a student of 2nd year graduate of the Software and Information Technologies of Bauman Moscow State Technical University. Author of two articles. Research interests: digital image processing. e-mail: tvkrapchatova@mail.ru

Filippov M.V. (b. 1953) graduated from Moscow Engineering Physics Institute in 1977. Ph.D., Assoc. Professor of the Software and Information Technologies Department of Bauman Moscow State Technical University. Author of more than 50 scientific and educational publications in the field of computer-aided design and digital signal processing. Research interests: digital signal processing, pattern recognition, the development of information security. e-mail: profitbig@rambler.ru
