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Parametric optimization of imaging system based on minimization of image distortion (Proceedings Paper)

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Imaging System Technology for Remote Sensing, [Mingzhi Wei](#); Xinjian Yi; Jianzhong Han; [Fiodor F. Sizov](#), Editors, pp.184-195

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Paper Abstract

The paper describes an approach to parametric optimization of an IR imaging system. This approach is based on minimization of image distortion of a multi-bar test object. The quality of imaging system is defined by a probability of correct pixel classification. This probability characterizes an error of image binarization. The paper represents the mathematical model that binds the probability of correct pixel classification with parameters of an imaging system such as focal length, aperture diameter, dimensions of photosensitive element, integration time and etc. It allows to get the merit function for parametric optimization and to identify the optimal relationship between spatial resolution and temperature resolution.

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