Method for calculating an optoacoustic signal in a layered structure using a convolutional neural network

D. A. Kravchuk and N. N. Chernov

Federal University
Southern Federal University
Bld. E, 2 Schevchenko st., Taganrog, 347922, Russia
E-mail: kravchukda@sfedu.ru; denik545@ya.ru

The rapidly developing field of optoacoustic diagnostics and visualization of biological structures by optoacoustic method is driven by the constant need to improve diagnostic performance in terms of resolution, speed, sensitivity, depth and contrast. The processing of the corresponding parameters from the biofluid under study requires solving the problems of inverse image reconstruction, which are quite difficult to solve. Against this backdrop, the popularity of deep learning methods has exploded recently, leading to advances in medical diagnostics. Deep learning methods have unique advantages that can facilitate the clinical application of the optoacoustic method, reduce computation time, and adapt to any specific task.

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