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Original article

Detection of tissue optical properties; a comparison study

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Abstract

Determine the optical properties of biological tissue is an important issue in medical applications. These optical properties are absorption coefficient (μ_a), scattering coefficient (μ_s) and anisotropy factor (g). There are many theoretical methods to measure tissue optical properties. These theoretical methods can be applied by knowing number of experimental quantities, but, there are no ensure informations about the most accurate method. In this work, two different methods are used to determine the optical properties of biological tissue. They are Kubelka Munk (KM) model and three dimension diffusion approximation (TDDA). In KM, the optical properties are determined while in three dimension diffusion approximation, the diffuse reflection and transmission were determined. The results of K.M were compared with other works from the literature and the results were in good agreements while for TDDA, there was a disagreement and it need a reevaluation comparing with the other methods.

Key words: Optical properties, Kubelka Munk model, three dimension diffusion approximation

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