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DIFFUSE LIGHT TRANSMISSION PROFILES USING TIME RESOLVED IMAGING

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In this work, we investigate the time resolved transmission profiles for diffuse light when several objects are embedded in a turbid medium. The transillumination imaging method involves illuminating the scattering medium with a pulsed laser beam transmitted through a recipient containing the turbid medium and detecting the temporal distribution of the transmitted pulse using a fast detector. The time resolved technique involves using temporal extrapolation performed with the cumulant expansion solution to the transport equation; this temporal extrapolation is also performed with the diffusion approximation solution. Both extrapolations are compared. We show that the profiles obtained for different objects are in good agreement using both approximations.