

Abstract Submitted  
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**Experimental studies of laser light scattering in turbid media<sup>1</sup>**  
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4560 — We inject an angularly collimated laser beam into a scattering medium of a  
non-dairy creamer-water solution and examine the distribution of the scattered light  
along the optical axis as a function of the source-detector spacing. The experimental  
and simulated data obtained from a Monte Carlo simulation on the optical axis  
suggest four regimes characterizing the transition from un-scattered to diffusive light.  
We compare the data with theoretical predictions based on a first-order scattering  
theory for regions close to the source, and with diffusion-like theories for larger  
source-detector spacings. We comment on the impact of the measurement on the  
light distribution and show that the regime of validity of these theories can depend  
on the experimental parameters such as the diameter and acceptance angle of the  
detection fiber.

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