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Submitted by: GINIS, Harilaos University of Crete ginis@ivo.gr

Can scatter actually be measured in the eye?

Ginis HS, Perez GM, Bueno JM, Artal P.

Different ocular pathologies may increase the naturally occurring light scattering in the human eye, affecting retinal image quality and visual performance. However there are not available sensitive and accurate optical techniques for the measurement of the amount and nature of the intraocular scatter. The obvious difficulty lies in the fact that scattered light, even at angles of a few degrees from the peak of the PSF, is several orders of magnitude less intense than the peak that is governed by refractive error and aberrations. Other challenges, include the differentiation of actual scatter in the optical media from retinal and choroidal diffusion and the elimination of backscatter that might interfere with forward measurements. Up to date, intraocular scatter, has been estimated by means of phychophysical techniques. Psychophysical methods, that have been particularly successful, require specially designed optical schemes (for the presentation of the stimulus), a specific task and a suitable data analysis method. Optical techniques may benefit from refinements in these directions also. These improvements may pertain to the creation of the appropriate imaging conditions where scattered light intensity can be calculated based on the effects of scatter on the acquired image.