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[904] Multi-channel optical coherence tomography in ophthalmology

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Conventional optical coherence tomography (OCT) employs a single illumination/detection channel to obtain 3D-data-sets of transparent or translucent samples. Our research focuses on the application of multiple channels for OCT in the field of ophthalmology, to help diagnose and monitor leading causes of blindness such as age-related macular degeneration, glaucoma or diabetic retinopathy. Using so-called multi-channel OCT, we are able to, on the one hand investigate ocular blood flow at the posterior pole of the eye (retina and choroid) by performing Doppler-OCT, and on the other hand study the directional scattering behavior of retinal tissue such as the photoreceptor layer.

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