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Paper Title:	Retinal arterial blood flow measured by real-time Doppler holography at 33,000 frames per second
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Abstract

This study presents a novel quantitative estimation method for total retinal arterial blood flow utilizing real-time Doppler holography at an unprecedented frame rate of 33,000 frames per second. This technique, leveraging high-speed digital holography, enables non-invasive angiographic imaging of the retina, providing detailed blood flow contrasts essential for assessing retinal health. The proposed quantitative analysis method consists of segmenting primary in-plane retinal arteries and calculating local blood velocity using Doppler frequency broadening. The analysis integrates a forward scattering model to achieve blood flow estimation. Our findings highlight the potential of Doppler holography as a powerful tool for diagnosing and monitoring the treatment of retinal vascular conditions, complementary to existing imaging methods.
