Standard versus high resolution Spectral Optical Coherence Tomography in imaging of retinal pathologies

Iwona Gorczyńska*^a, Anna Szkulmowska^a, Maciej Szkulmowski^a, Piotr Targowski^a,
, Jakub J. Kałużny^b, Maciej Wojtkowski^c, James G. Fujimoto^c and Andrzej Kowalczyk^a

^aInstitute of Physics, Nicolaus Copernicus University, Grudziądzka 5, 87-100 Torun, Poland

^bDepartment of Opthalmology, Collegium Medicum, Nicolaus Copernicus University,

Curie-Sklodowskiej 9, 85-094 Bydgoszcz, Poland

^cDepartment of Electrical Engineering and Computer Science, Research Laboratory of Electronics,

ABSTRACT

Massachusetts Institute of Technology, Cambridge, Massachusetts 02139, USA

In this contribution we demonstrate comparison between two high speed Spectral OCT instruments with different axial and identical transverse resolutions used for imaging of various retinal pathologies. Cross-sectional OCT images of higher axial resolution enable improved visualization of small focal lesions in the retina, which can be missed in standard resolution OCT measurements. Optimal parameters of SOCT clinical systems are discussed. We compare cross-sectional images of selected clinical cases of advanced retinal pathologies obtained with both instrument.

Keywords: Spectral Optical Coherence Tomography, retinal imaging

μ