



Digital interferometric demodulation of Placido mires applied to corneal topography

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This paper presents a novel digital interferometric method to demodulate Placido fringe patterns. This is a synchronous method which uses a computer-stored conic-wavefront as demodulating reference. Here we focus on the experimental aspects to phase-demodulate Placido mires applied to corneal topography. This synchronous method is applied to two topographic Placido images and their de-modulated corneal-slope deformation is estimated. This conic-interferometric method is highly robust against typical "noise" signals in Placido topography such as: reflected eyelashes and iris structures. That is because the eyelashes and the iris structures are high frequency "noisy" signals corrupting the reflected Placido mire, so they are filtered-out by this method. Digital synchronous interferometry is here applied for the first time to demodulate corneal topographic concentric-rings images (Patent pending at the USPTO).

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