Cristalline Lens Abberration During Laser Surgery

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Abstract

Femtosecond laser are now a regular tool of the modern ophtalmic surgeon, for instance in cataract surgery by enabling precise cut of the cristalline lens tissue before removal. As femtosecond laser tissue interaction is highly dependant of the energy spatial density, a simplified model of laser setup for ex-vivo testing as been modelled in order to explore how the spot shape of the laser is affected by the refractive properties of the lens and its geometry and how this may result in completely unhomogeneous interactions. Results are then compared with real histology performed on ex-vivo pig lenses.

Figures used in the abstract

Figure 1 : Aberration of the laser spot map in the lens.