

"Physics for a better vision"

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The human eye is a simple optical system, but very well adapted to the special requirements of our visual system. A better understanding of the optical physics properties of the eye allowed to develop new technologies to improve vision in many people. In this talk, I will revise the main optical properties of the eye and different experiments we developed during the last decades in my laboratory. In particular, based in the use of adaptive optics to manipulate light wavefronts in the eye.

I will also present several recent results ranging from the nature of the lens movements, the development of new types of intraocular lenses to new opto-electronic instruments for the correction of cataracts and presbyopia.