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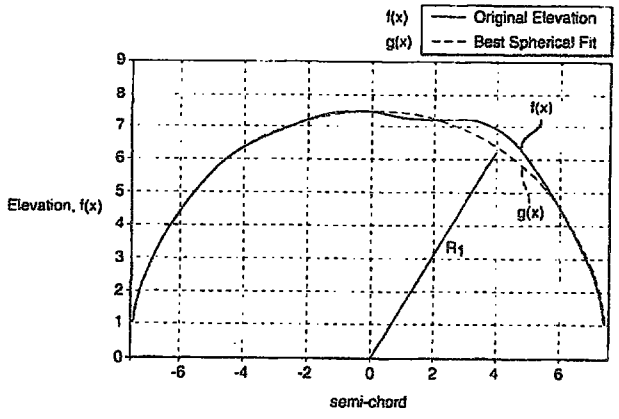
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(54) Title: SYSTEM AND METHOD OF INTEGRATING CORNEAL TOPOGRAPHIC DATA AND OCULAR WAVEFRONT DATA WITH PRIMARY AMETROPIA MEASUREMENTS TO CREATE A SOFT CONTACT LENS



(57) Abstract: A system and method is provided for integrating corneal topographic data and ocular wavefront data with primary ametropia measurements to create a soft contact lens design. Corneal topographic data is used to design a better fitting soft contact lens by achieving a contact lens back surface which is uniquely matched to a particular corneal topography, or which is an averaged shape based on the particular corneal topography. In the case of a uniquely matched contact lens back surface, the unique back surface design also corrects for the primary and higher order optical aberrations of the cornea. Additionally, ocular wavefront analysis is used to determine the total optical aberration present in the eye. The total optical aberration, less any corneal optical aberration corrected utilizing the contact lens back surface, is corrected via the contact lens front surface design. The contact lens front surface is further designed to take into account the conventional refractive prescription elements required for a particular eye. As a result, the lens produced exhibits an improved custom fit, optimal refractive error correction and vision.

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