

# An update of Hopkins analysis of the optical disc player using singular system theory

Edward Pike  
Physics, King's College  
roy.pike@kcl.ac.uk

## **Abstract**

In this paper we describe a new approach to the analysis of scanning optical imaging systems which uses singular function expansions, rather than Fourier optics, to update the well-known low-aperture treatment of Hopkins of 1974 for arbitrary numerical apertures. This new approach can also be used to update the widely used theory of optical transfer functions for general imaging systems.