

Geometric optimization of a reflector

Samuel Amstutz

Avignon Université

Abstract

I will discuss the shape derivative for the optimal design of telescope mirrors. A probabilistic ray tracing model will be considered for the mathematical analysis as well as for the numerical computations. The shape derivative of optical criteria will be developed in the framework of Hadamard's boundary variation method. It will be illustrated by a few examples using parametric derivatives deduced from this approach. This is a joint work with Benjamin Aymard, Audric Drogoul and Luca Gorini.