

Interface with Ray Tracing Tools

Introduction

Tools used: BeamPROP, CODE V

Typically, a lens system may be simulated efficiently using ray tracing techniques, but these become inaccurate when the geometry size scale is on the order of the wavelength of interest. In that case, more rigorous techniques such as the Beam Propagation Method or Finite-Difference Time-Domain are required. Hybrid simulation using multiple techniques can be achieved via the passing of field data between simulators, as shown here in this simple lens to fiber coupling example where the lens is analyzed via ray tracing (RTA) and the fiber via beam propagation, **BeamPROP** BPM.

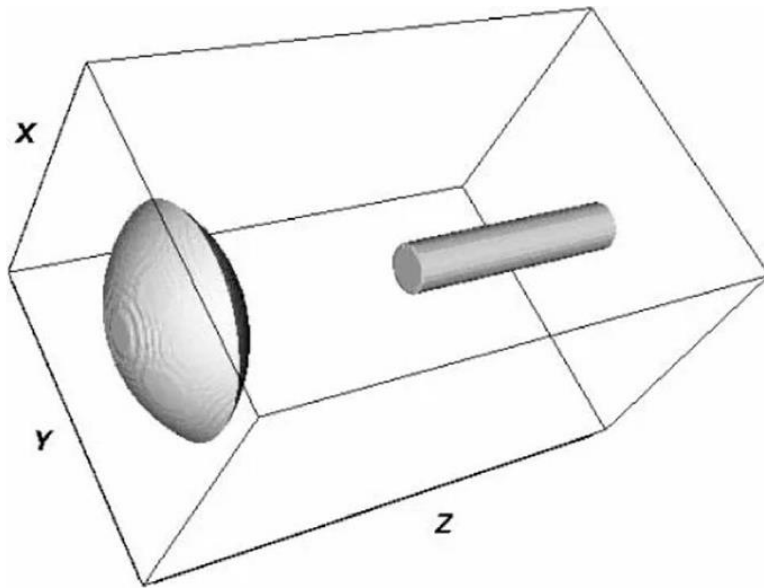


Figure 1. Lens to fiber coupling example

RSoft tools contain an interface to convert the output from industry-standard ray tracing packages such as **CODE V**.

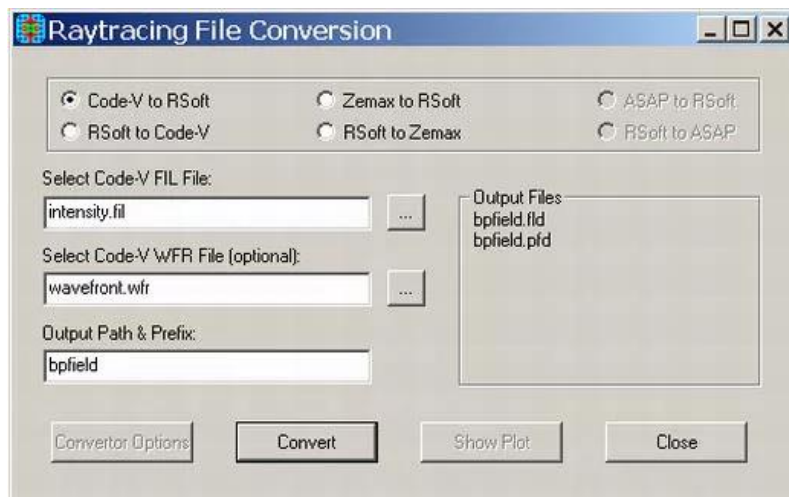


Figure 2. Raytracing file conversion CODE V to RSoft

As an example, the amplitude and phase information constructed from the output rays of a ball lens rendered in CODE V are shown here.

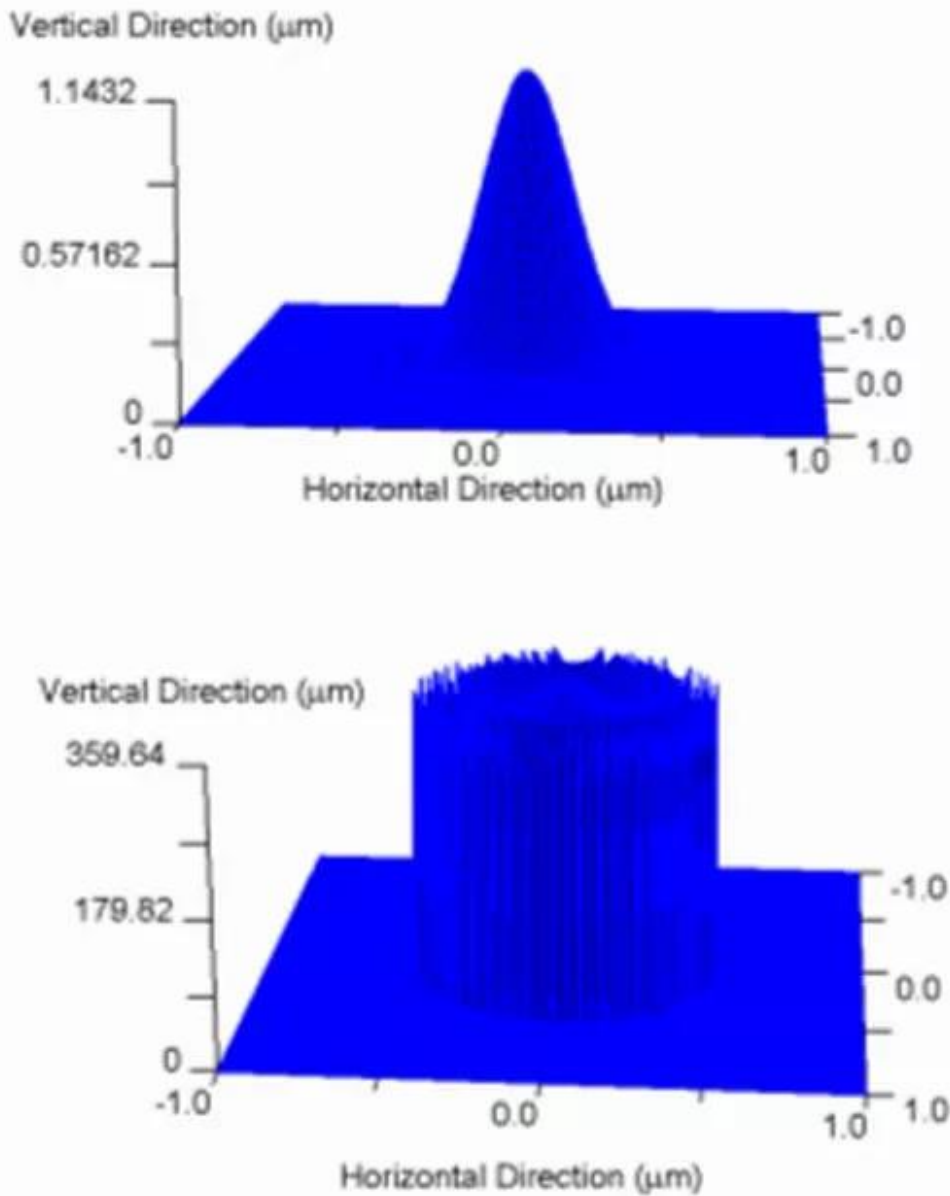


Figure 3. Amplitude and phase information constructed from the output rays of a ball lens

These proprietary formats are converted by the RSoft Raytracing Interface to input files that are ready to be used in RSoft Simulation tools. Furthermore, output from RSoft simulations can be converted to formats understandable by CODE V.