Multi-plane Light Conversion

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Simulation of the Multi-Plane Light Conversion (MPLC)[1] based on the article by Fontaine *et al* [2]. This technology transform a set of Gaussian beams into a compacted Hermite-Gaussian Beams, which can be transformed into Laguerre-Gaussian (LG) beams[3]. In telecommunication services, LG beams are used to transfer information over the atmosphere with low losses[4].

A simplified scheme of the MPLC technology is represented in Figure 1. The simulation uses the wavefront matching algorithm[5] to calculate the fields and phase masks at each plane. The intensity of the fields at each plane that reflected the fields are shown in Figure 2. The correspondent phase masks are shown in Figure 3.
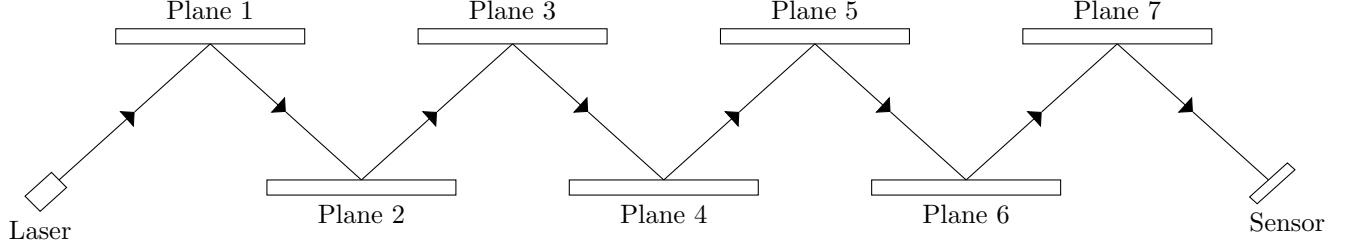

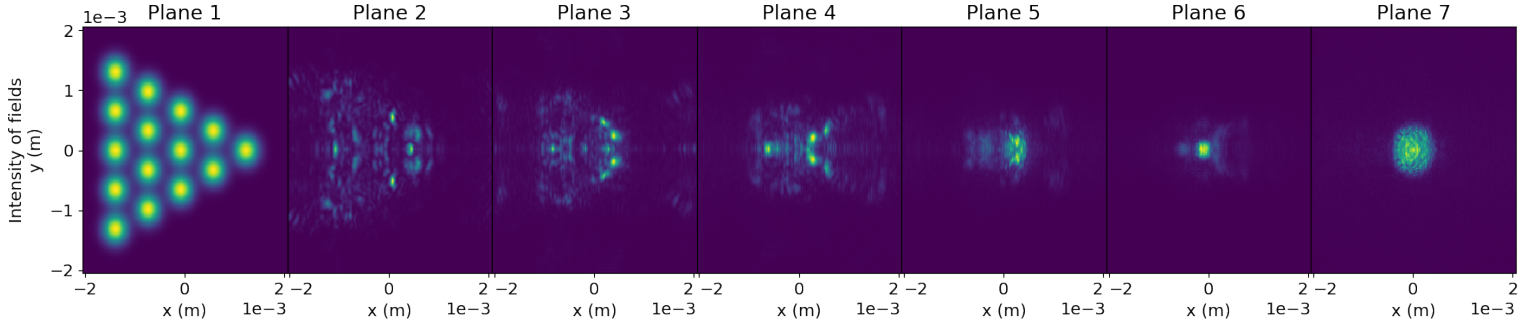Figure 1: Simplified scheme representing the MPLC technology.

Figure 2: Plot of the intensity of the fields at the different planes of the MPLC.
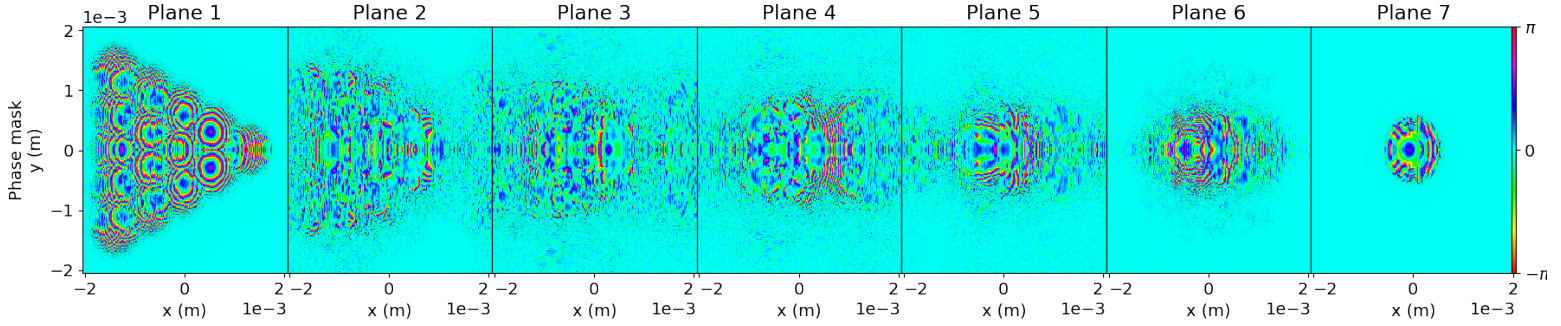

Figure 3: Plot of the phase masks at the different planes of the MPLC.

References

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