Title:	Beam shaping using Spatial Light Modulator
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Abstract:	Laser beam shaping is a process of redistribution of the irradiance and phase of optical radiation. By changing the irradiance and phase of the beam profile, we can also control the propagation of the laser beam. The optical beam control method is an important technique that is used in many different areas of research. The form of the laser beam usually corresponds to its irradiance profile, while the direction of the beam typically determines its propagation characteristics. Here in this thesis, we have presented both theoretically as well as experimentally the transformation of a Gaussian beam into a Laguerre Gaussian (LG) and Bessel beams by a phase-only liquid crystal spatial light modulator (LC-SLM) is based on the reflective beam shaping method. Where Computer-generated holograms can be used for shaping millimetre-wave beams and for producing complex field configurations. In accordance with the theory of energy conservation and constant optical path, the phase distribution can properly modulate the wave-front to generate the LG and Bessel beam. We have successfully generated the LG and Bessel beams and verified it with the interferometric setup using plane wave and spherical wave propagation as a reference beam. Our results are in nice agreement with the theoretical results.
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