



Ola



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Tesis:

"IMAGING SYMMETRIC AND ANTI-SYMMETRIC BEHAVIOR OF OAM- ENTANGLED STATES"

Resumen:

Orbital Angular Momentum (OAM) is a degree of freedom of photons promising for a wide variety of high-dimensional quantum applications. These states, as any used in future quantum technologies, need to be manipulated and studied for their use. We use a known technique for tuning the symmetry of OAM states using dove prisms and study the properties of their interference in a spatially resolved measurement. We found that fringes produced depend on the type of symmetry of the state, moreover, we recover the original Hong-Ou-Mandel interferometers from these spatially resolved measurements and analyze the consequences of this symmetric/anti-symmetric superposition on the visibility.

Furthermore, we propose two applications of these kinds of measurements, one for high-dimensional quantum teleportation and another one to achieve an image enhancement in quantum ghost imaging.