

Simulating spontaneous parametric down-conversion using classical light

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Abstract

We present a simple way of simulating Spontaneous parametric down-conversion (SPDC) by modulating a classical laser beam with two spatial light modulators (SLM) through a back projection setup. This system has the advantage of having very high photon count rates, it can simulate a large range of pump beam profiles simply by modifying the hologram on the SLM, and it can be easily converted to a SPDC setup by simply changing only two of its components without the need to perform realignment. This setup can be used to give an indication whether a SPDC experiment will be feasible in a very short amount of time.