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Simulating spontaneous parametric down-conversion using classical light

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Abstract content
   (Max 300 words)
Formatting &
Special chars

Entangled photon pairs can be readily produced through spontaneous parametric down-conversion (SPDC). However such a system can be very difficult to setup due to the low photon count rates. We present a simple method of simulating the effect of the pumping process in SPDC by modulating a classical laser beam with two spatial light modulators (SLM) through a back projection setup. We simulate a large range of pump beams for quantum state engineering and confirm that the results are in agreement with theory. Our approach offers high photon count rates, is quick to yield results and can easily be converted back to a SPDC setup. It is likely to be a useful tool before starting more complicated SPDC experiments with custom pump profiles.

Apply to be
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No

Level for award
 (Hons, MSc,
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PhD

Main supervisor (name and email)
and his / her institution

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Would you like to
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No

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