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## Self-healing of quantum entanglement

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**Abstract content**   
 (Max 300 words)   
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Bessel-Gaussian (BG) beams have been the subject of great interest for many years, particularly due to their non-diffracting nature. The ability of BG beams to self-heal their fields after encountering an obstruction has typically been used in classical light applications, such as optical trapping. However, we show that this property extends to the quantum regime. An obstacle placed in the propagation path of the entangled photons causes a loss in the measured entanglement. By comparing two different bases, the Laguerre-Gaussian and BG, we show that recovery of the measured entanglement only occurs when the photons are projected into the BG basis.

**Apply to be considered for a student award (Yes / No)?**

Yes

**Level for award (Hons, MSc, PhD)?**

PhD

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

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**Would you like to submit a short paper for the Conference Proceedings (Yes / No)?**

No

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