

Abstract Submitted
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Correlated Photon-Pair Generation Based on Spontaneous Four-Wave Mixing in Open & Closed Ladder-Type Atomic System JIHO PARK, HAN SEB MOON, Pusan National University — We obtained a bright photon-pair source via spontaneous four-wave mixing in a Doppler-broadened atomic ensemble of the open ($5D_{1/2} - 5P_{3/2} - 5D_{5/2}$) and closed ($5D_{1/2} - 5P_{3/2} - 5D_{3/2}$) ladder-type atomic systems of ^{87}Rb . We characterize and compare the photon-pairs generated from both atomic configurations according to the vapor cell temperature and the pump and coupling powers. The coincidence counting rate of the open atomic system is smaller than that of the closed system under the same conditions because of different two-photon coherence. Our bright photon pair source will be used for two photon interference and quantum memory experiment. We believe that our source is important as a useful quantum light source.

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