This read me file describes the research data for

**Coherent Perfect Absorption of Single Photons in a Fibre Network**

Anton N. Vetlugin1,[[1]](#footnote-1)a), Ruixiang Guo1, Angelos Xomalis2, Salih Yanikgonul1,3, Giorgio Adamo1, Cesare Soci1,a), Nikolay I. Zheludev1,2

1*Centre for Disruptive Photonic Technologies, SPMS, TPI, Nanyang Technological University, Singapore 637371*

2*Optoelectronics Research Centre and Centre for Photonic Metamaterials, University of Southampton, Southampton SO17 1BJ, United Kingdom*3*Advanced Optical Technologies, Institute of Materials Research and Engineering , Agency for Science, Technology and Research, Singapore 138634*

a) Authors to whom correspondence should be addressed. Electronic mail: a.vetlugin@ntu.edu.sg, csoci@ntu.edu.sg.

This research dataset should be interpreted and understood in the context of the corresponding manuscript, which has been published in Applied Physics Letters in 2019. All relevant information regarding the dataset, how it was obtained and its context is contained in the manuscript. The data corresponds to the data shown in figures 2-4 of the manuscript.

This dataset supports the publication:

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Figure 2. Reference-based post selection technique. (a) Fibre-stretcher periodically induced length shift of one arm of the interferometer showed in photon wavelength units (λ=810 nm). (b) Total single photon counts measured at the detector APD-c. Minima corresponding to the coherent perfect absorption regime (filled dots) within each fibre-stretcher cycle are used as references. The time intervals τ\_i between these points (shaded regions) are compared with the expected value τ\_0 in the absence of noise. Time intervals τ\_i close to τ\_0 are likely to be not affected by thermal fluctuations of the interferometer and are used for further data analysis.

Figure 3. Implementation of reference-based post selection technique. Coincidence counts between detectors APD-c and APD-h without (a) and with (b) post selection. The visibility V is shown for each fitting curve (solid lines) and improved by 10% after implementation of data processing. Fitting is done according to (4)-(6). Side points in (a) are not taken into account for fitting since phase modulation has a jump around these points (Fig. 2a). Error bars are defined by Poisson distribution of photon flux and cannot be improved by data post selection.

Figure 4. Single-photon coherent absorption. (a) Measured probabilities of the heralded photons, passing through the metamaterial absorber, to take output C (triangles) and output D (rhombi) and to be detected by the detectors APD-c and APD-d, respectively, in dependence on the phase delay φ between two arms of the interferometer. (b) Total single-photon transmission probabilities (circles) in dependence on the phase delay φ. All lines are data fitting according to (4)-(6).

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File creation: Data file created by Anton Vetlugin in January 2018

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1. [↑](#footnote-ref-1)