Data set for

Observation-dependent suppression and enhancement of two-photon coincidences by tailored losses

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1. General Information

Dataset title	Observation-dependent suppression and enhancement of two-photon coincidences by tailored losses
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2. Description

This document serves as a guideline for the data repository of the publication [1]. The guideline concerns the acquisition and report format of measurement data as well as information about the deposited files.

3. Archive Structure

File name	Description
Intensity_H.dat	Near field images of horizontally polarized light in non-Hermitian system
Intensity_V.dat	Near field images of vertically polarized light in non-Hermitian system
H_coupling.csv	Separation-dependent coupling rate for horizontally polarized light extracted from waveguide coupler's transmission
V_coupling.csv	Separation-dependent coupling rate for vertically polarized light extracted from waveguide coupler's transmission
H_Polarizer.csv	Coincidence counts for different photon delays and basis orientations theta. Sample: horizontal polarizer
Hermitian_50.csv	Coincidence counts for different photon delays and basis orientations theta. Sample: lossless, birefringent waveguide, 50/50 coupler
Hermitian_100.csv	Coincidence counts for different photon delays and basis orientations theta. Sample: lossless, birefringent waveguide, 0/100 coupler
Non_Hermitian_50.csv	Coincidence counts for different photon delays and basis orientations theta. Sample: lossy, birefringent waveguide, 50/50 coupler
Non_Hermitian_100.csv	Coincidence counts for different photon delays and basis orientations theta. Sample: lossy, birefringent waveguide, 0/100 coupler

4. Data acquisition and report format

The datasets "Intensity_H.dat" and "Intensity_V.dat" are raw data of a CCD camera image (12-bit resolution, 1040x1392 pixels). The measured intensity of each pixel (ordered by rows and columns) was recorded over ten summations. Individual data files can be read out e.g. with MATLAB via the command *load('filename')* and are presented in Fig. 3b of publication [1].

The datasets "H_coupling.csv" and "V_coupling.csv" provide results of transmission measurements of a directional waveguide coupler (column 2&3) depending on the waveguides' separation (column 1). The resulting coupling rates are listed in the columns 4 and 5. Extended Data Fig. 1 of publications [1] shows the data.

The datasets “H_Polarizer.csv”, “Hermitian_50.csv”, “Hermitian_100.csv”, “Non-Hermitian_50.csv” and “Non_Hermitian_100.csv” contain two-photon coincidences for different arrival times (listed in first column) and observation bases orientations (listed in first row). The datasets are presented in Fig. 4b, Extended Data Fig. 2 and 3 of publication [1].

5. References

[1] M. Ehrhardt, M. Heinrich and A. Szameit. Observation-dependent suppression and enhancement of two-photon coincidences by tailored losses. (2022) https://doi.org/10.1038/s41566-021-00943-3