

Abstract Submitted  
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**Scattering tomography of nanophotonic devices**<sup>1</sup> TOMAS RAMOS, Spanish Research Council (IFF-CSIC), HANNA LE JEANNIC, NIR ROTENBERG, PETER LODAHL, Niels Bohr Institute and Center for Hybrid Quantum Networks, University of Copenhagen, JUAN JOSE GARCIA-RIPOLL, Spanish Research Council (IFF-CSIC) — We present a method for experimentally characterizing the multi-photon scattering matrix and multi-photon correlations from the output of complex nanophotonic devices. The tomography requires the preparation of coherent state pulses and the measurement of homodyne or intensity- intensity correlations. We explain the basic steps for the reconstruction of single- and two-photon processes, and provide a first experimental test using a quantum dot inside a photonic crystal waveguide. These results open the door to explore quantum light-matter interactions in the controlled multi-photon regime.

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