



Quantum plasmonics: second-order coherence of surface plasmons launched by quantum emitters into a metallic film

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We address the issue of the second-order coherence of single surface plasmons launched by a quantum source of light into extended gold films. The quantum source of light is made of a scanning fluorescent nanodiamond hosting five nitrogen-vacancy (NV) color centers. By using a specially designed microscopy that combines near-field optics with far-field leakage-radiation microscopy in the Fourier space and adapted spatial filtering, we find that the quantum statistics of the initial source of light is preserved after conversion to surface plasmons and propagation along the polycrystalline gold film.

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