



Contribution ID : 78

Type : **Oral**

Quantum estimation reaching for the continuum

martedì 12 ottobre 2021 14:30 (25)

We discuss two experimental results on the problem of quantum estimation applied to functions. We illustrate quantum function estimation of the phase response of a liquid crystal employing both quantum and classical resources, providing evidence of the superiority of the former strategy. Including function estimation in the toolkit of quantum metrology opens up opportunities for quantum enhancement in problems such as evaluating time-dependent signals and mapping fields. The second experiment concerns semiparametric methods applied to the frequency two-photon wavefunction, based on Hong-Ou-Mandel interferometry. Tools from classical statistics and quantum estimation have shown their usefulness in analysing and engineering metrological schemes based on Hong-Ou-Mandel interference: we expect that advanced statistical methods will bring further insights.

Primary author(s) : Prof. BARBIERI, Marco (Università Roma Tre, Italy); CIMINI, Valeria (Università Roma Tre, Italy); ALBARELLI, Francesco (University of Warsaw, Poland); GIANANI, Ilaria (Università Roma Tre, Italy)

Presenter(s) : Prof. BARBIERI, Marco (Università Roma Tre, Italy)

Session Classification : Session 5