Shaping Spectral Entanglement

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Seminar – Friday April 1st 2022– 11h – C2N amphitheater

The photon entanglement of the spectral degree of photons is a spontaneous result of the nonlinear process of parametric down-conversion. It's details are a result of the specific phase-matching conditions and the original pump spectral properties. I will present how by controlling both of these parameters, the entanglement properties of down-converted biphotons can be engineered. Preliminary results will also be presented.

Hagai Eisenberg is currently an Associate Professor at the Racah Institute of Physics at the Hebrew University of Jerusalem and the Chief Scientist and co-founder of *QuantLR* - a Jerusalem based Quantum Cryptography startup. He is a graduate of the Technion and the Weizmann institute, after which he spent two and a half years of post-doc research in UC Santa-Barbara, before joining the Hebrew University in 2005. His field of research is Quantum Optics, spanning subjects from the foundations of Quantum Physics to the applications of contemporary Quantum Technology. In his lab, he seeks new ways to generate complex quantum states of the basic elements of light – photons. These states can serve in enhanced quantum communication protocols as well as be the basis for simple quantum computational tasks. In addition, he looks for novel methods to enhance the accuracy of optical measurements using quantum mechanics.