Intensity interferometry with optical telescopes: recent progress and future plans

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I will present the current status of the work done by our "Intensity Interferometry at Calern" (I2C) consortium in Nice (France) on the revival of intensity interferometry with optical telescopes.

In short, we have demonstrated intensity correlations using stellar light for the first time in the photon-counting regime, using 1m-class telescopes at Calern Observatory. We have then dedicated some effort to demonstrate the simplicity and portability of our instrument by adapting and using it successfully on different telescopes worldwide, including a 1-m portable telescope at Calern, the Auxiliary Telescopes at ESO-Paranal Observatory, and the 4-m SOAR telescope in Chile. Besides these technical demonstrations, we have also performed a few measurements of astrophysical interest, in particular on the Hα emission line of P Cygni.

In addition, I'll present our short-term plans to improve the sensitivity: using superconducting nanowire single-photon detectors and performing wavelength multiplexing. Finally, I'll discuss some of our long-term dreams, for instance measuring the angular diameter of Sirius B!