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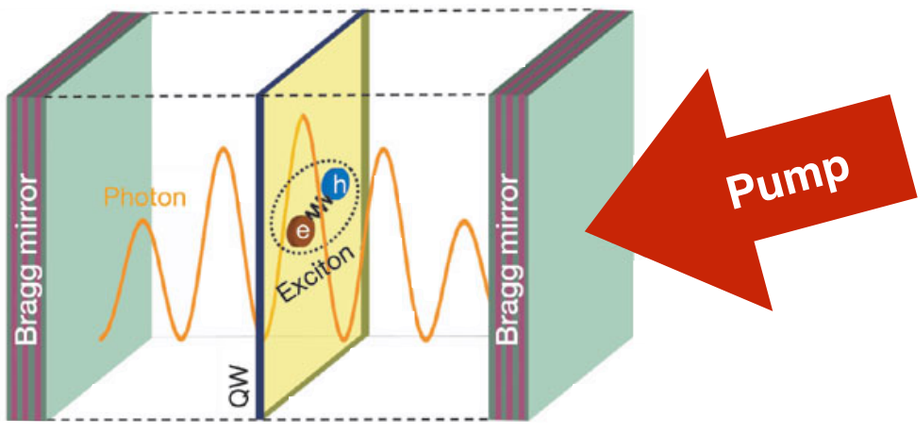
PROJET FINANCÉ PAR L'ANR - PROJECT FUNDED BY THE ANR

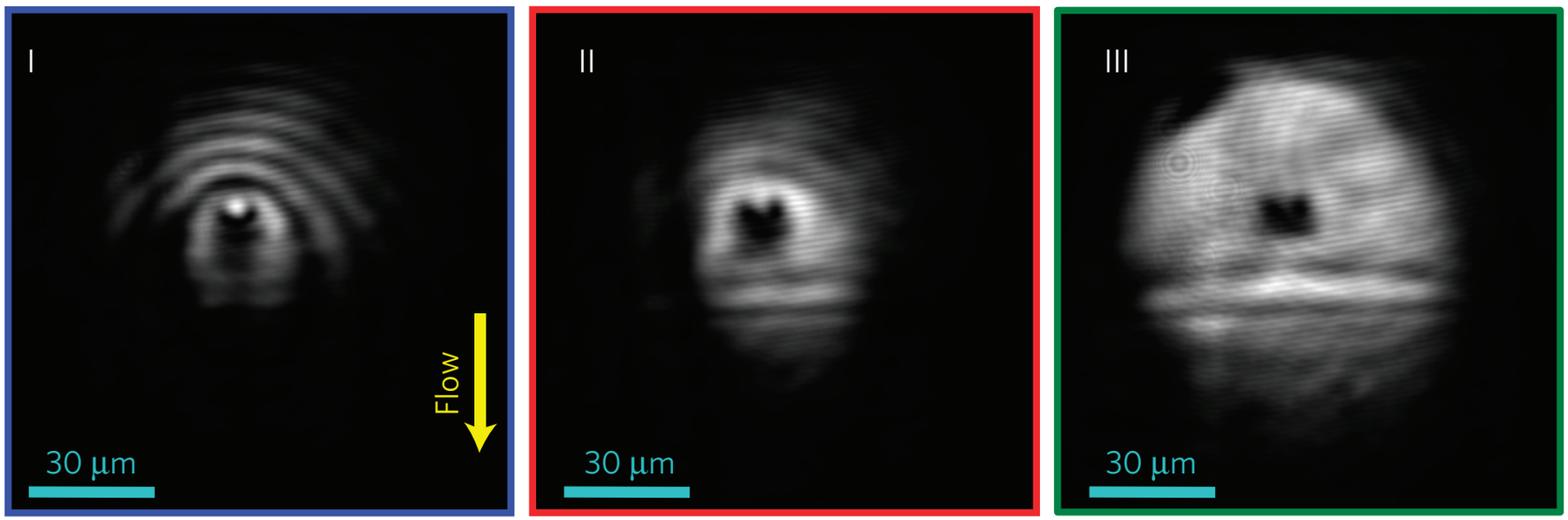
Manipulating & Controlling Polariton Superfluid Vortices



Polariton : matter/light quasi particles, raising from strong coupling between cavity light mode and quantum well excitonic transition

Increasing pump power

Transmitted light: flowing through a potential barrier, from standard fluid scattering to superfluidity



A. Amo, J. Lefrere, SP, C. Adrados, C. Ciuti, I. Carusotto, R. Houdre, E. Giacobino & A. Bramati, *Nature Physics.* **5** 805 (2009).

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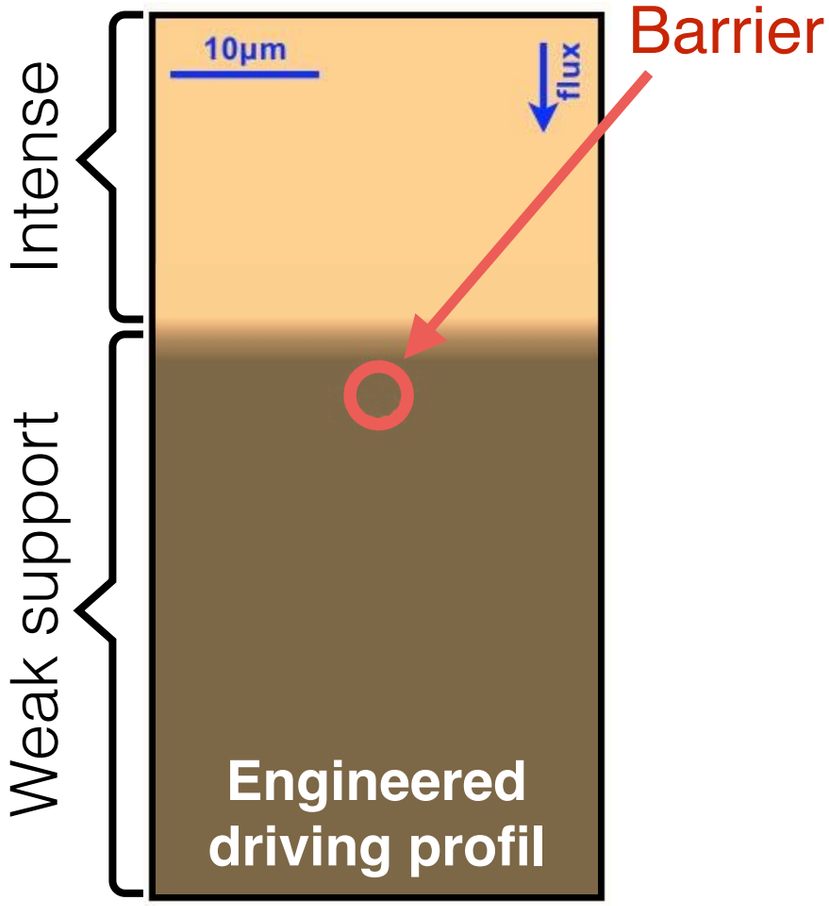
Manipulating & Controlling Polariton Superfluid Vortices

Resonant driving inhibits the formation of turbulence

⇒ Phase pining of the superfluid



SP, arXiv:1612.07028

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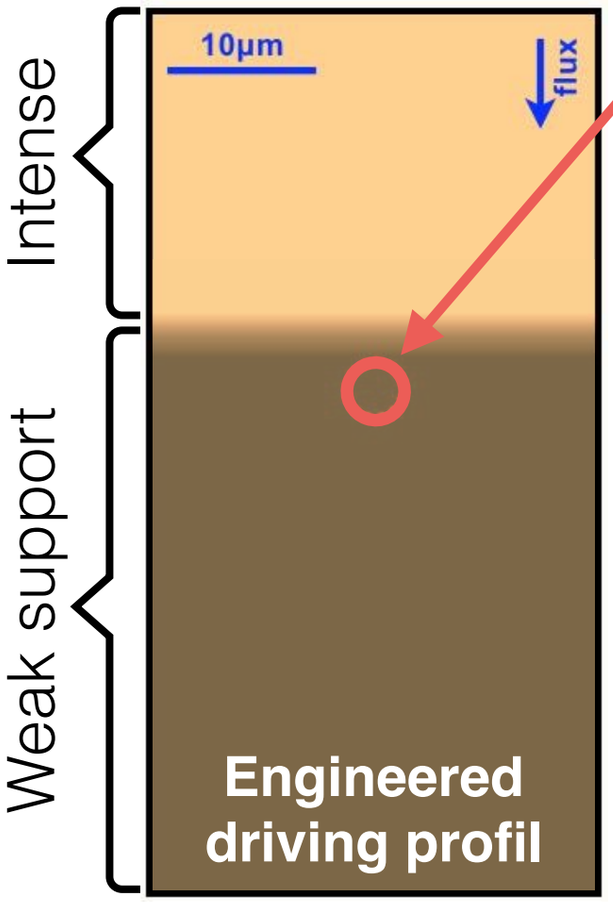

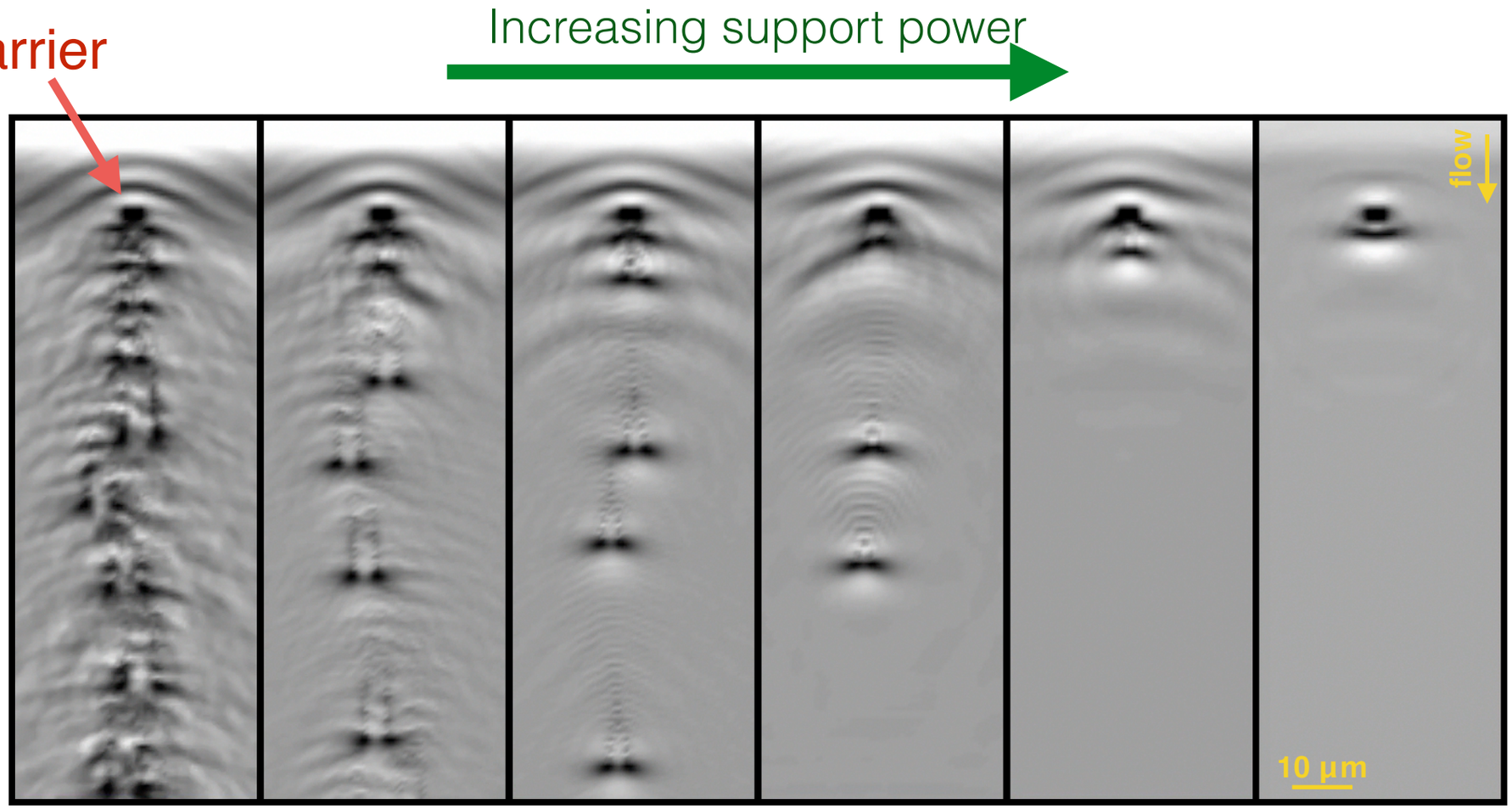

Transmitted light: From high speed and density vortex stream to no vortices

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