

# Ultrafast interference dynamics of polariton condensates

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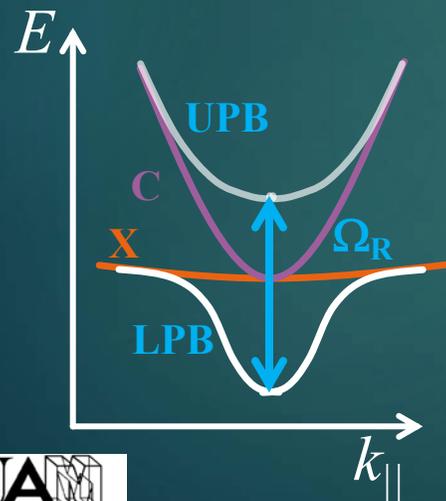
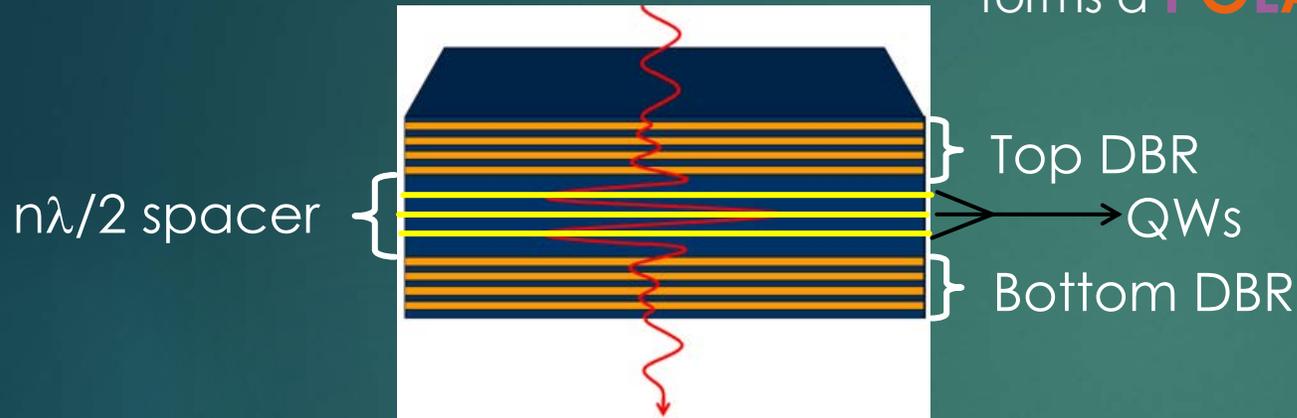
# Semiconductor Microcavities

Strong radiation-matter interaction between

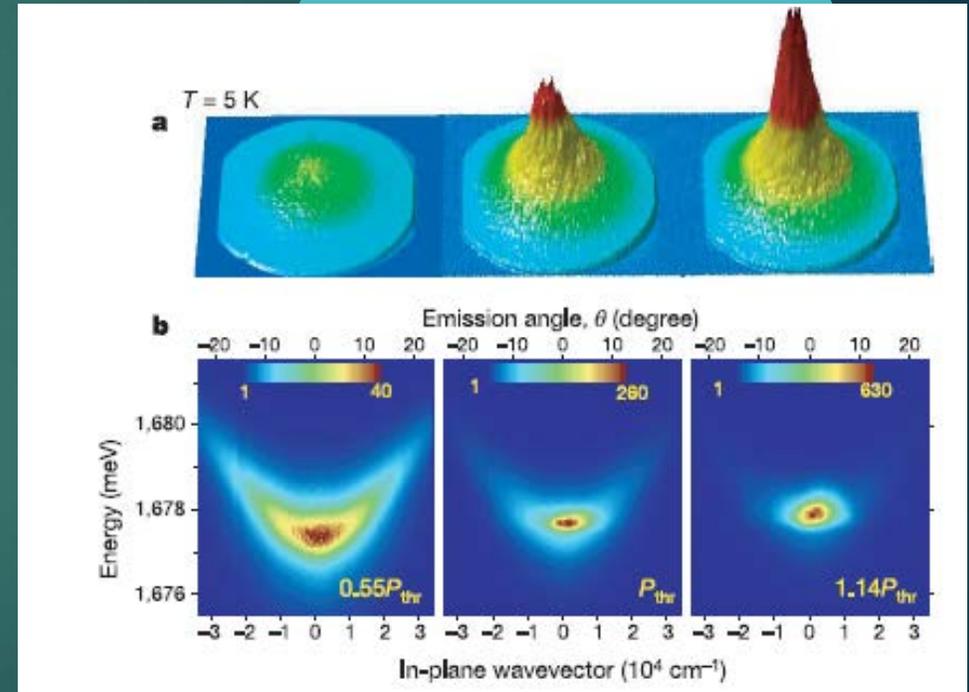
**Excitons** confined in QWs & **Photons** confined in Fabry-Perot resonator

forms a **POLARITON**

They CONDENSE (BEC-like)

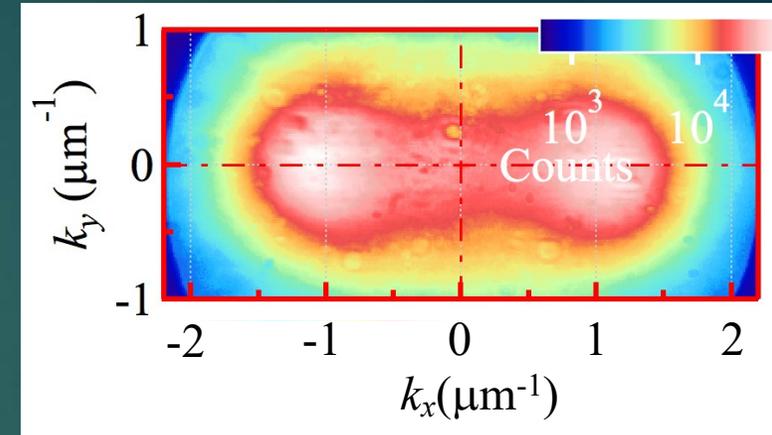
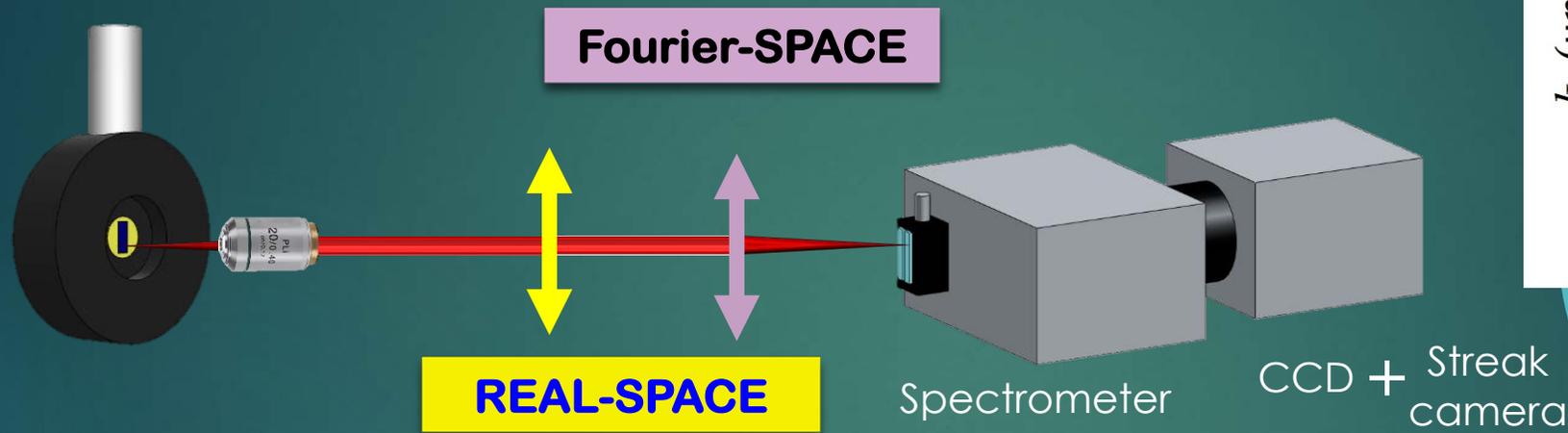


- Properties:**
- ✓ **Bosons**  $\Omega_R$  Rabi splitting
  - ✓ Exciton component: **strong interactions**
  - ✓ Photonic component: **low mass ( $10^{-5}m_e$ )**
  - ✓ Optical access to the wavefunction  
(energy, density, spin and phase)

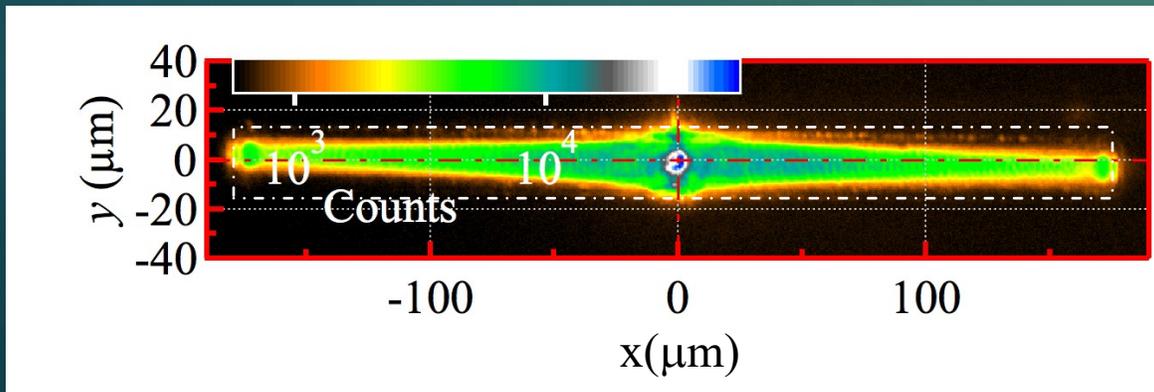


J. Kasprzak, et al., Nature **443**, 409 (2006)

# Experimental Details

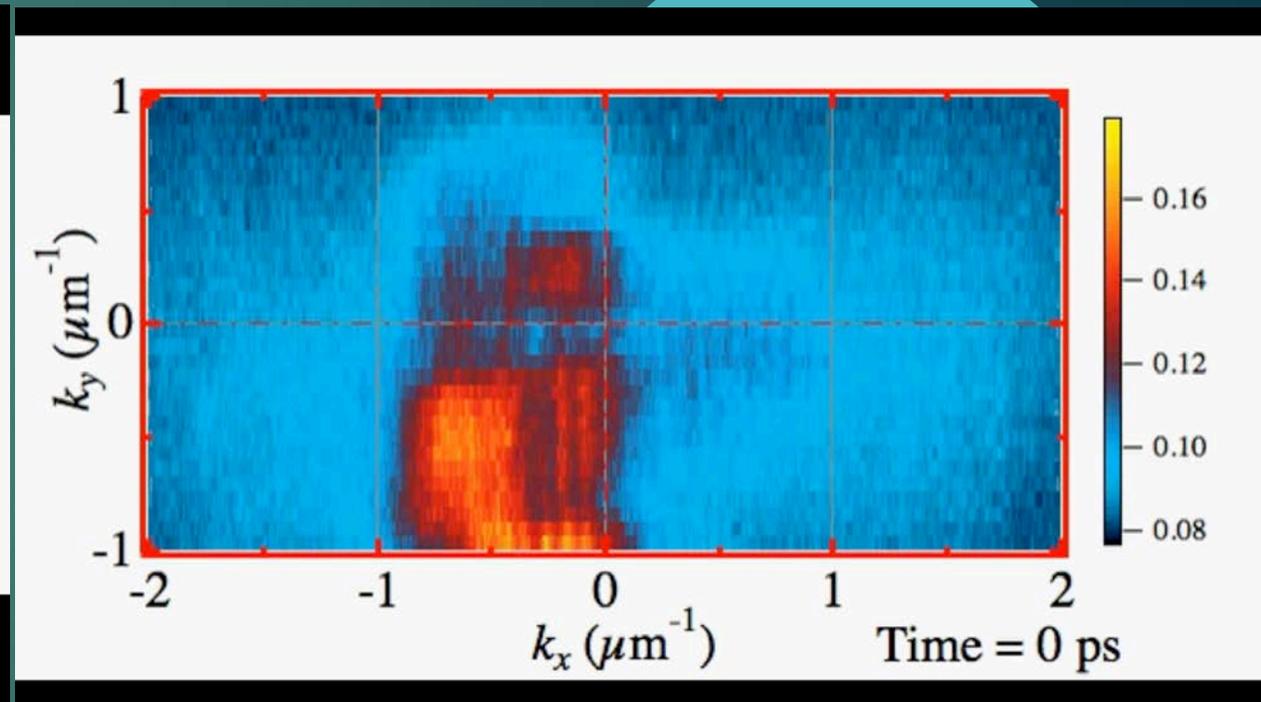
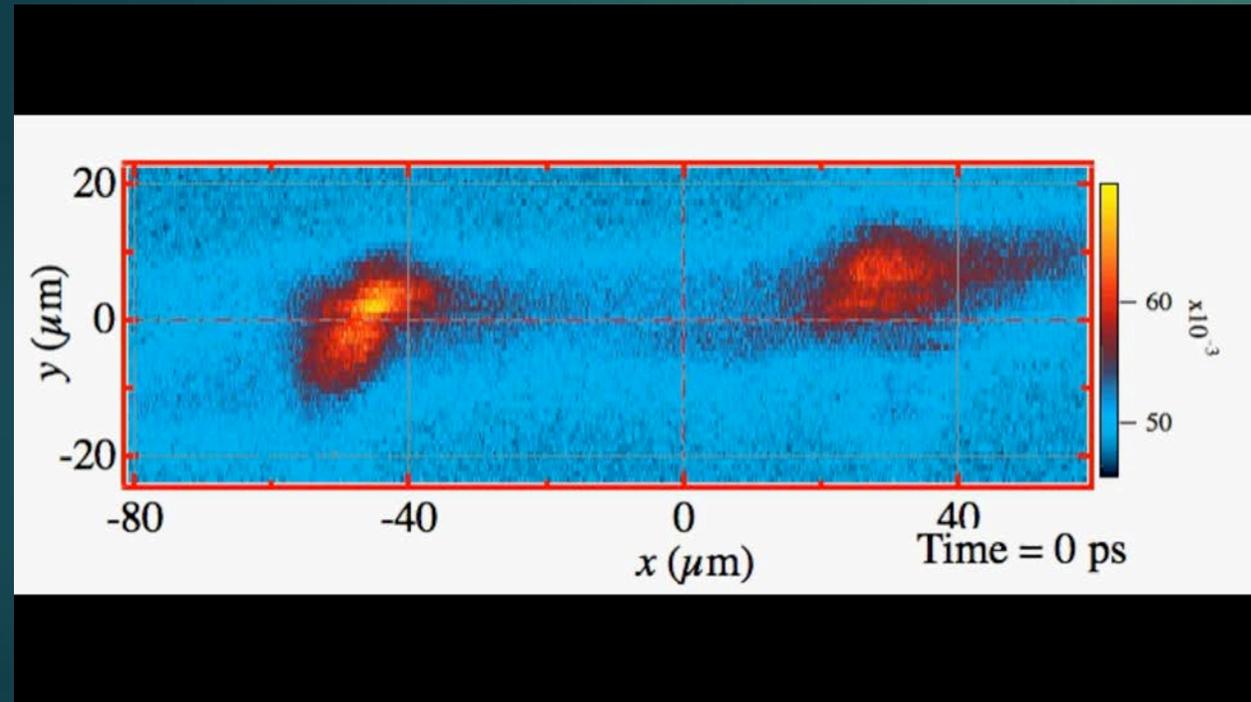


Resolution of 8 ps



# Interference of two remote condensates

4





Thank you for your  
attention!!