Enhance your ICFP Master with Complementary Knowledge on **Quantum Science** with

DigiQ

- Be part of a European Student Network with Novel Learning Activities
- Find **Funded Internships** among a Large Choice of Offers at Universities & Companies
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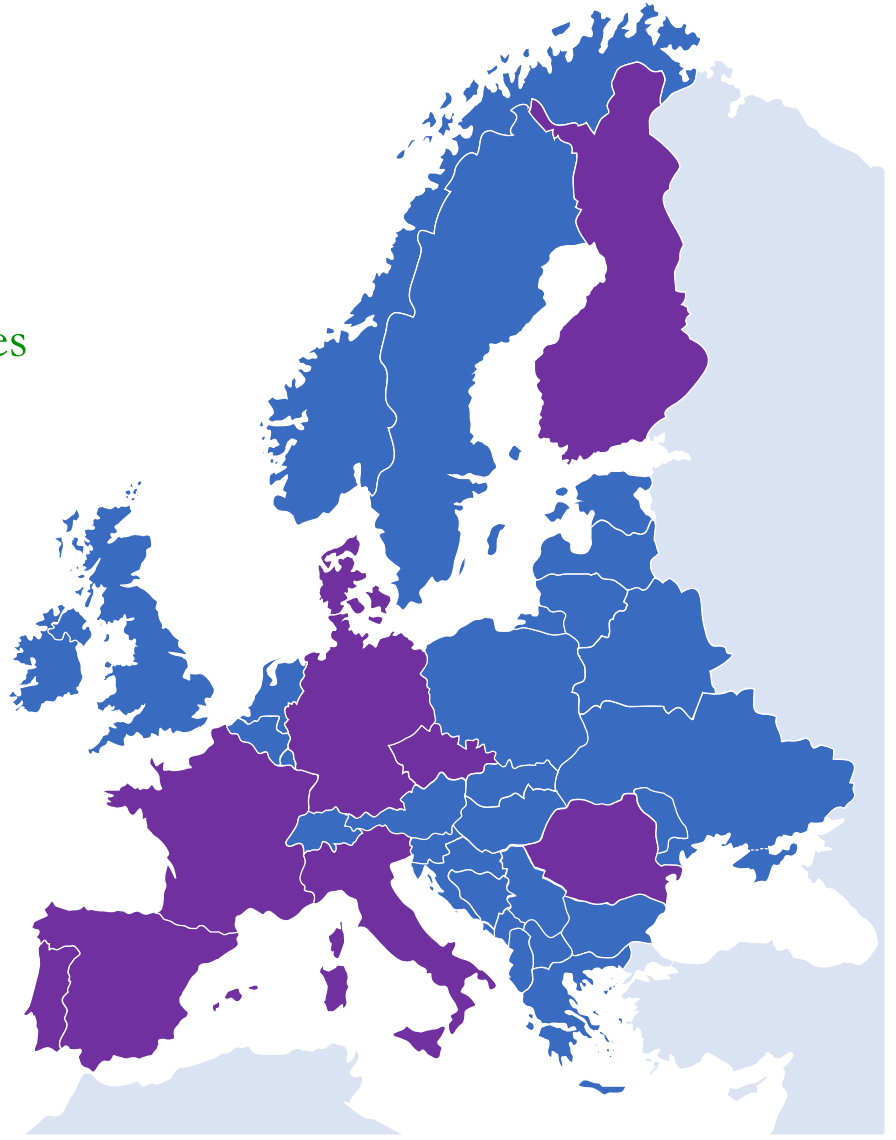
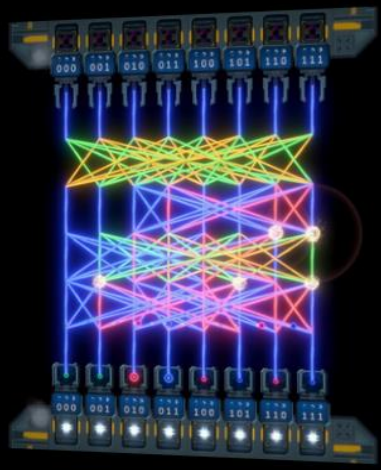
→ All costs are covered !!!



This project has received funding from the European Union's Digital Europe Programme under grant agreement no. 101084035.

Transforming the Landscape of Quantum Technology Education

24 Organisations from 10 countries are changing the way that Quantum Technologies are taught across Europe.

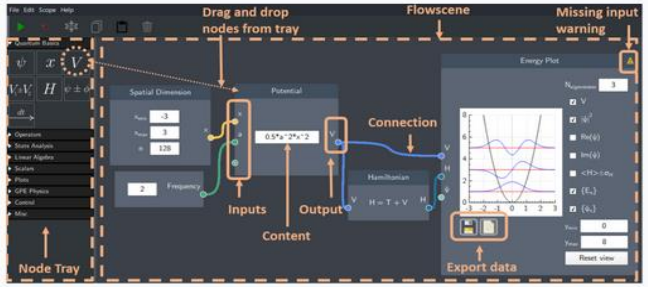


DigiQ-Module : **Quantum Odyssey, Quarks Interactive**

Mission of DigiQ

In order to meet the emerging need for a quantum-ready workforce in the coming decade, university training efforts within Quantum Technology will not only have to be massively scaled up but also comprehensively reformed. There is an urgent need for a wider understanding of the underpinnings of the quantum revolution as well as an increased awareness for the commercial potential of quantum innovations in the coming generations of quantum physicists.

The DigiQ project will spearhead a transformation of the educational ecosystem by introducing both a series of didactical innovations as well as a multinational program structure ready to be scaled up to the rest of the European Higher Education Area.



DigiQ-Module : **Quantum Composer** Aarhus University

Enhance your ICFP Master with Complementary Knowledge on **Quantum Science** with

DigiQ

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To learn more about opportunities
reach out to your local DigiQ representatives

Tarik Yefsah (ENS)
Clément Sayrin (Sorbonne Université)

Contact email
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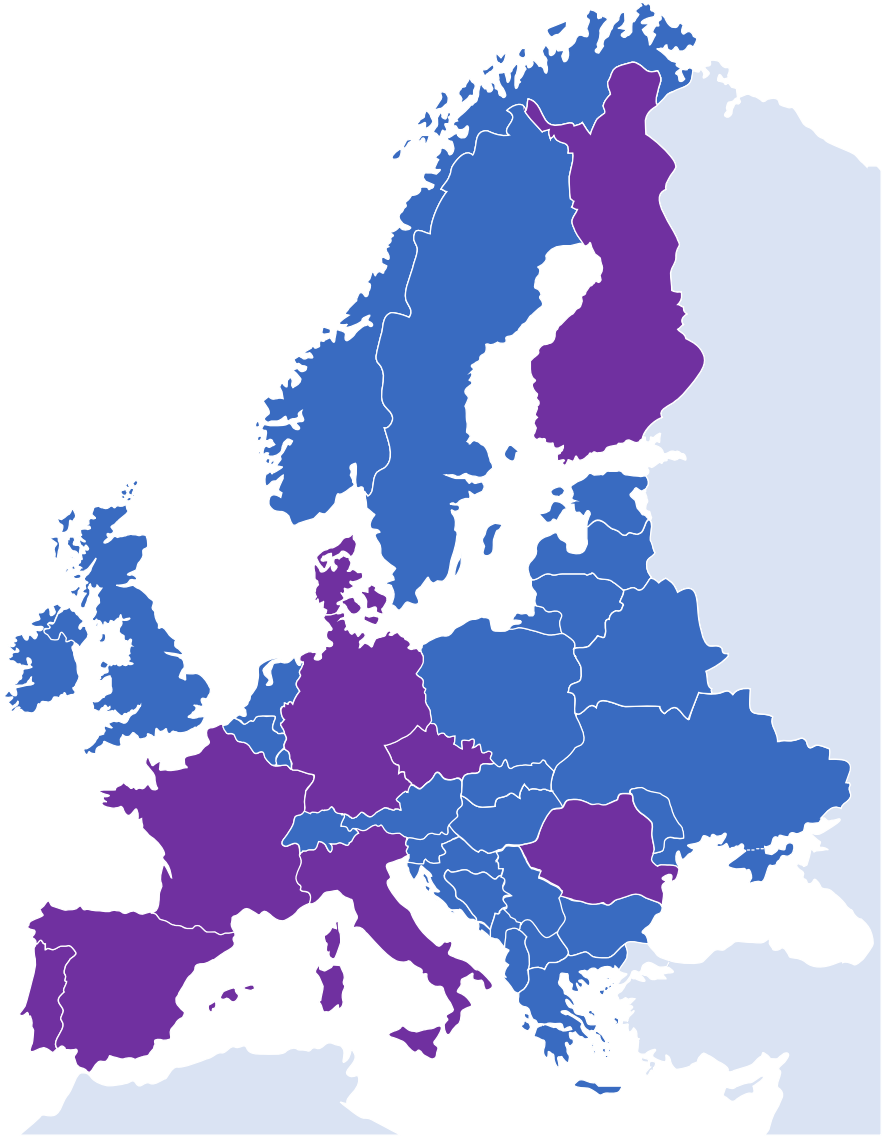

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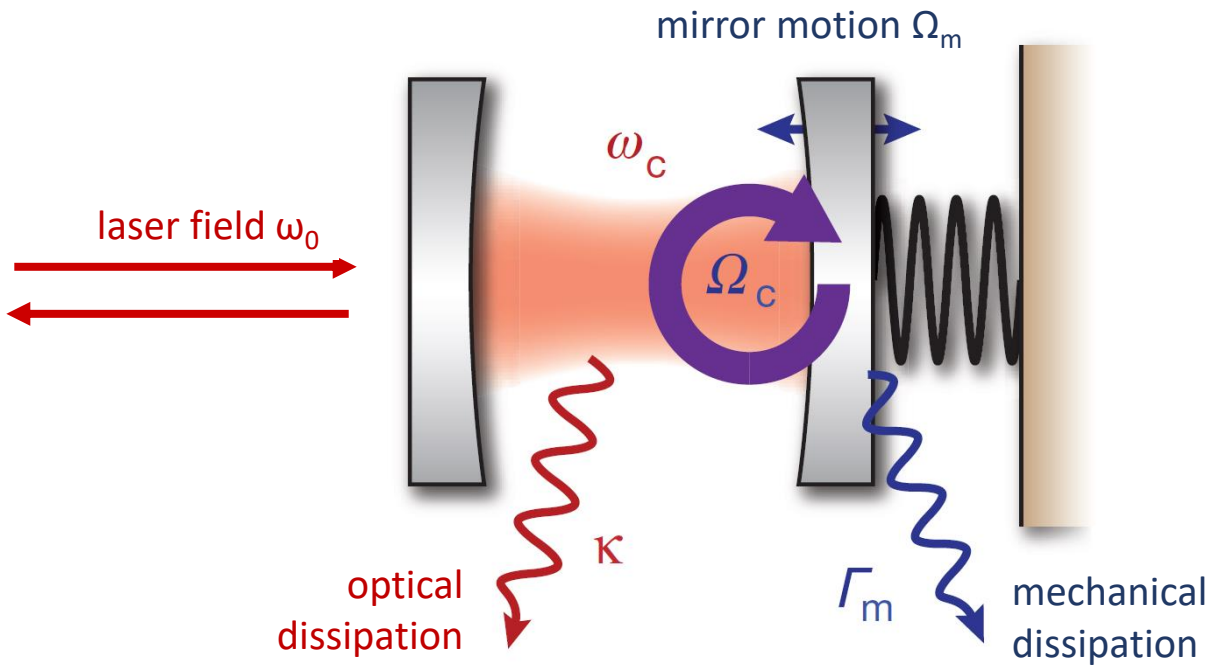
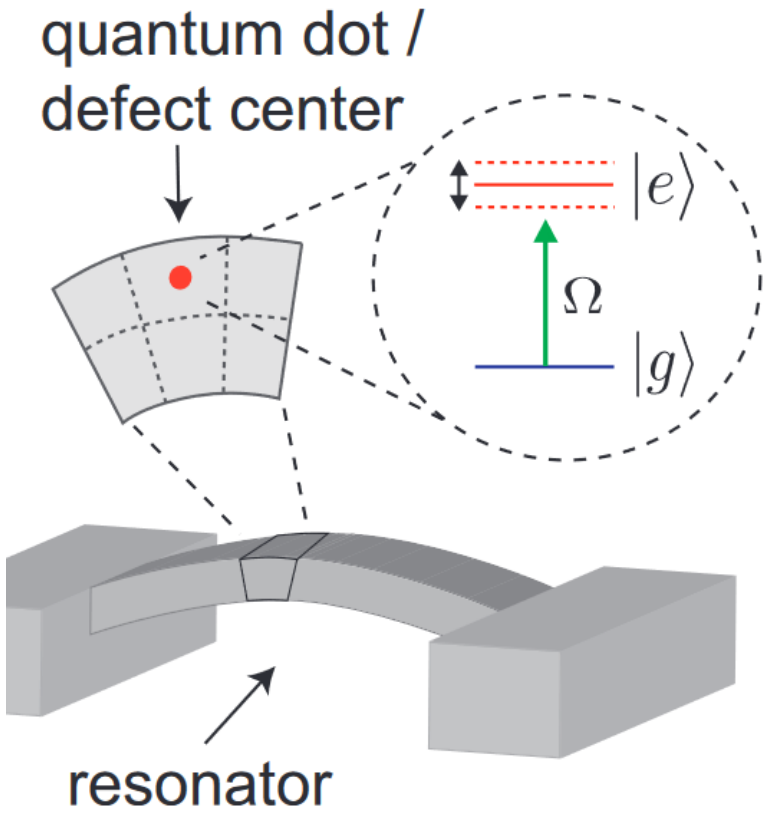
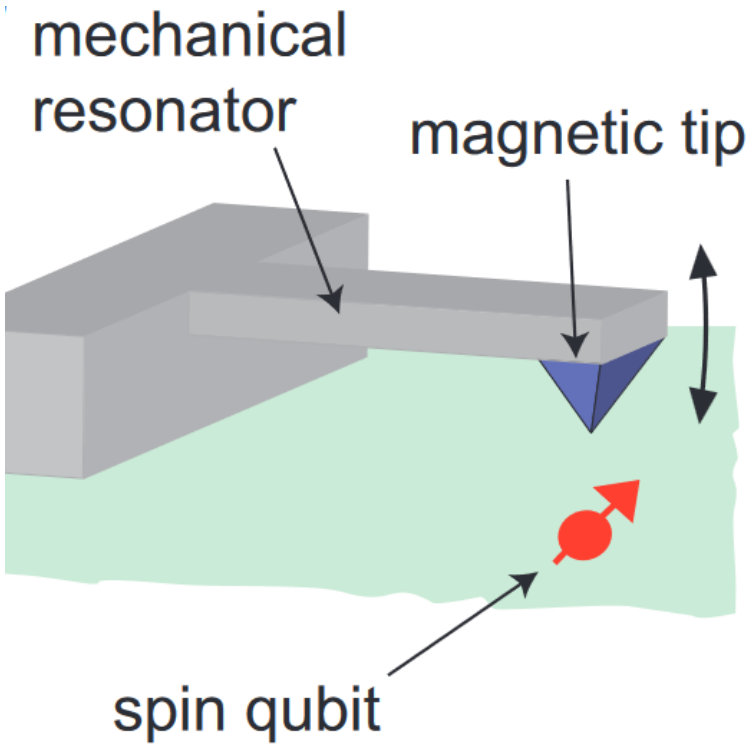
A cavity with a moving mirror

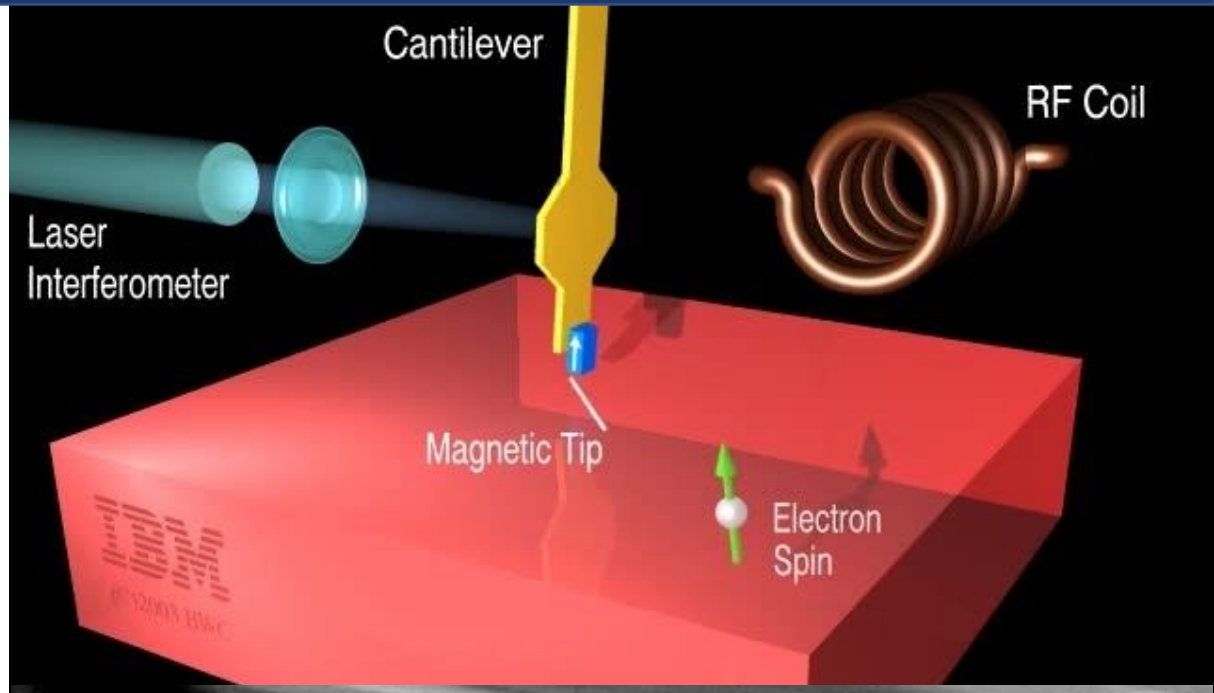


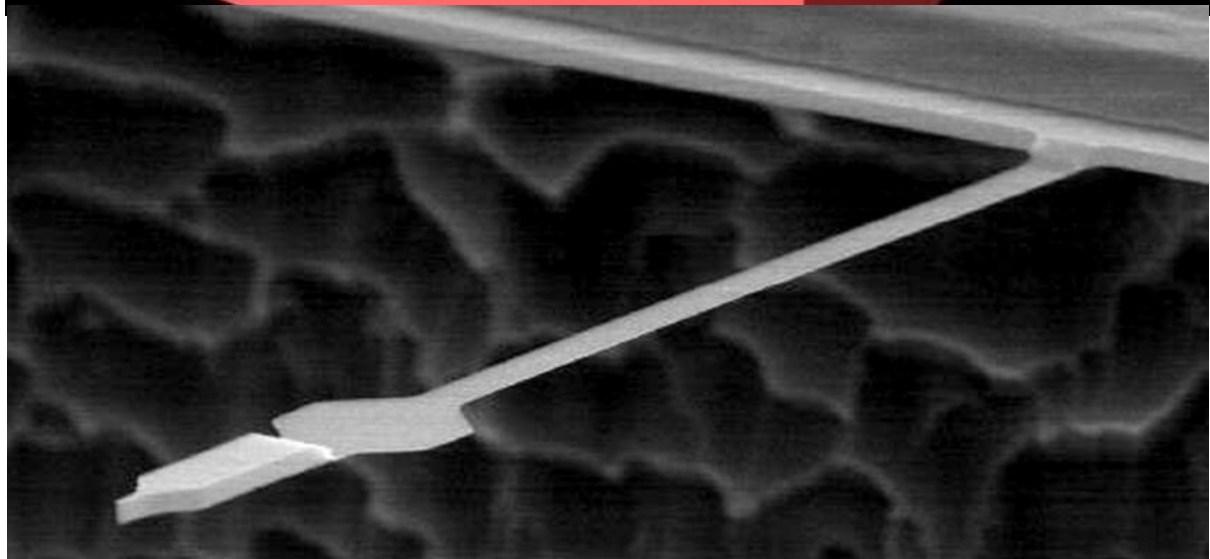
Strain coupling of a quantum dot



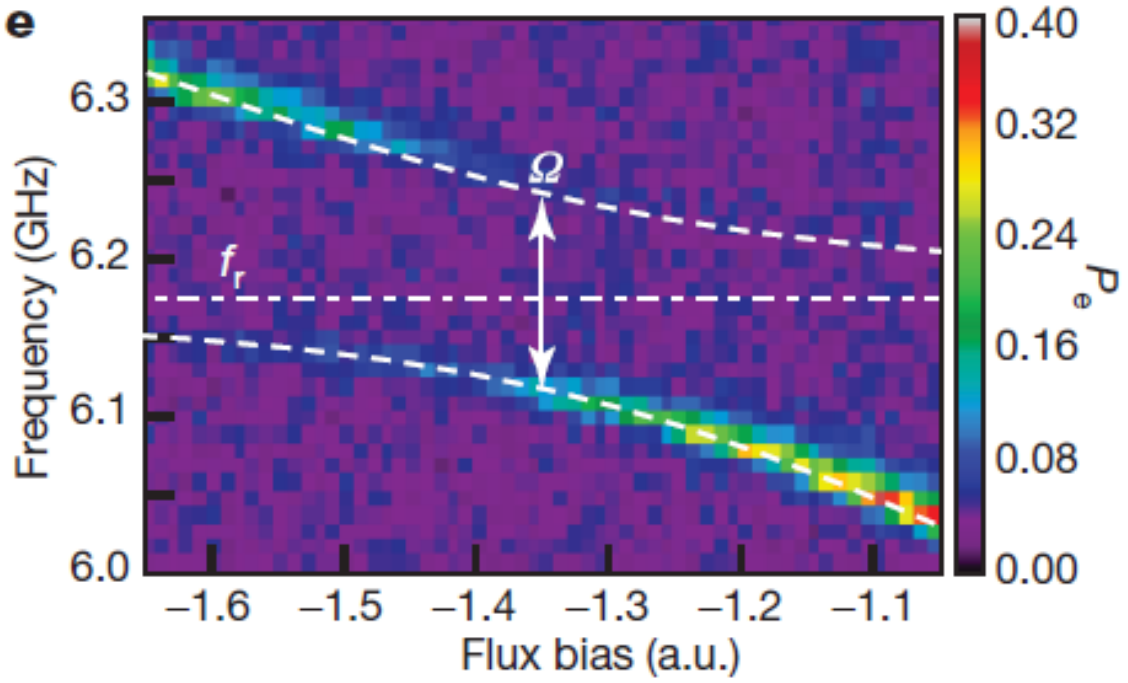
Coupling with an electron spin

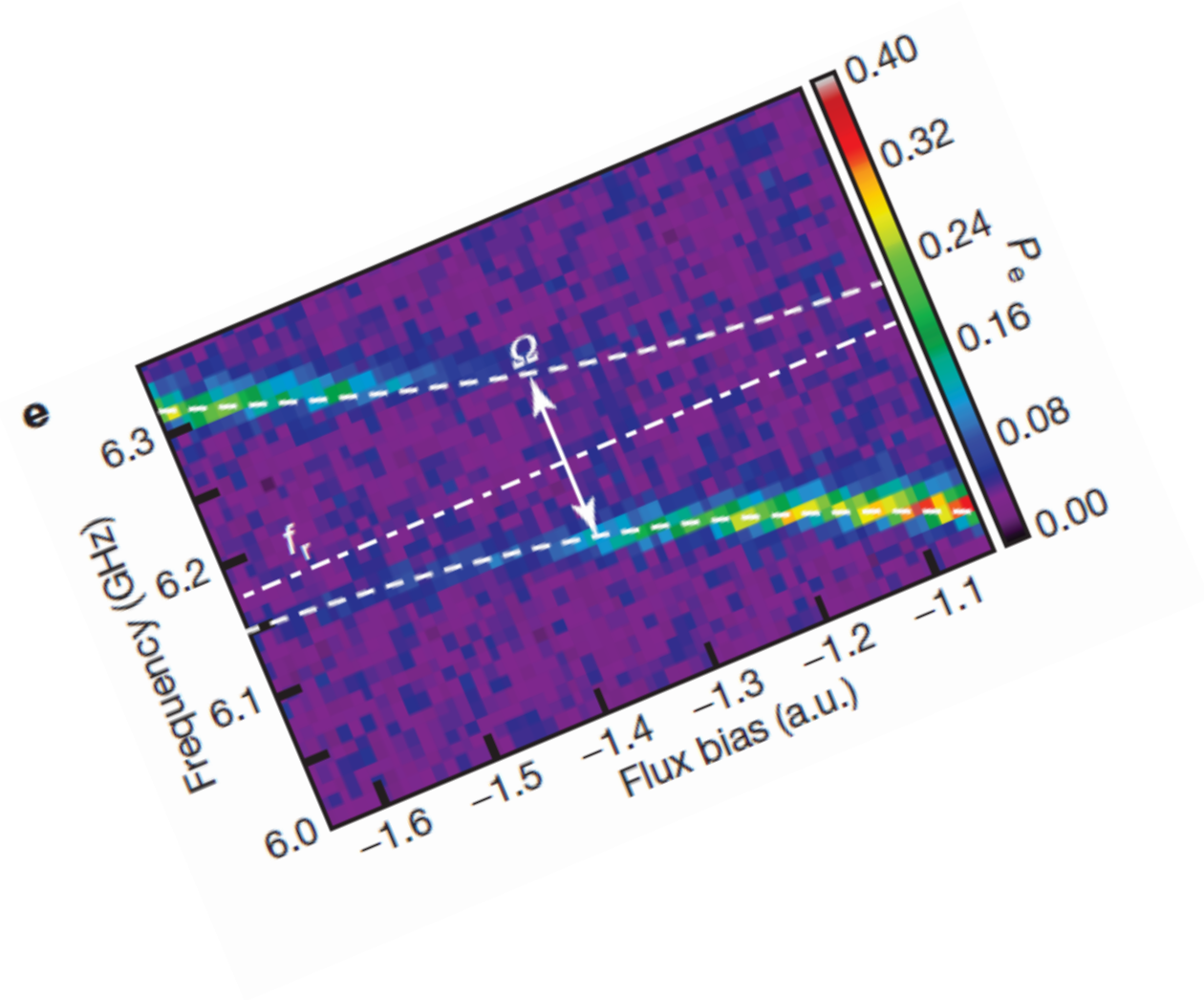






Strong coupling

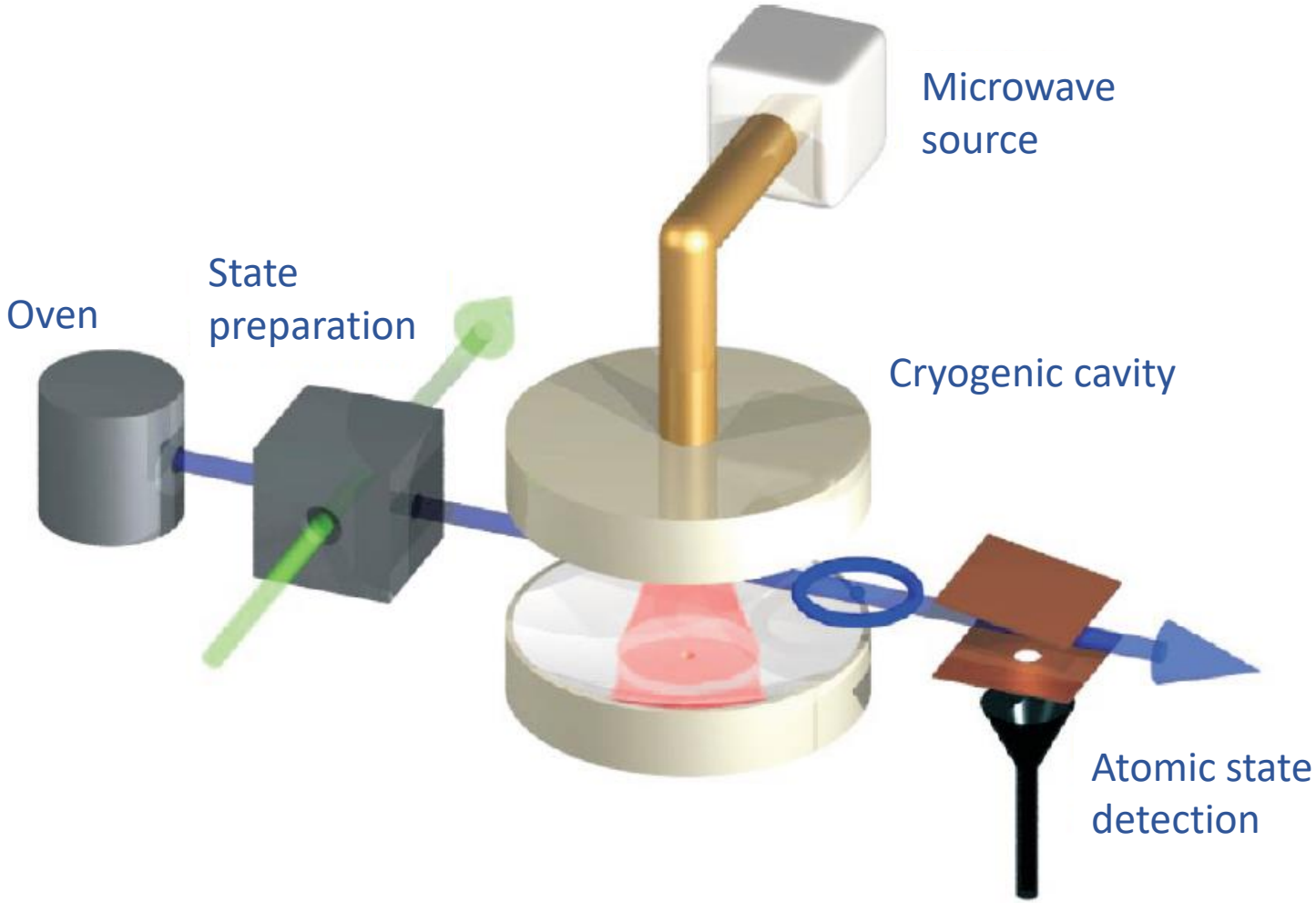




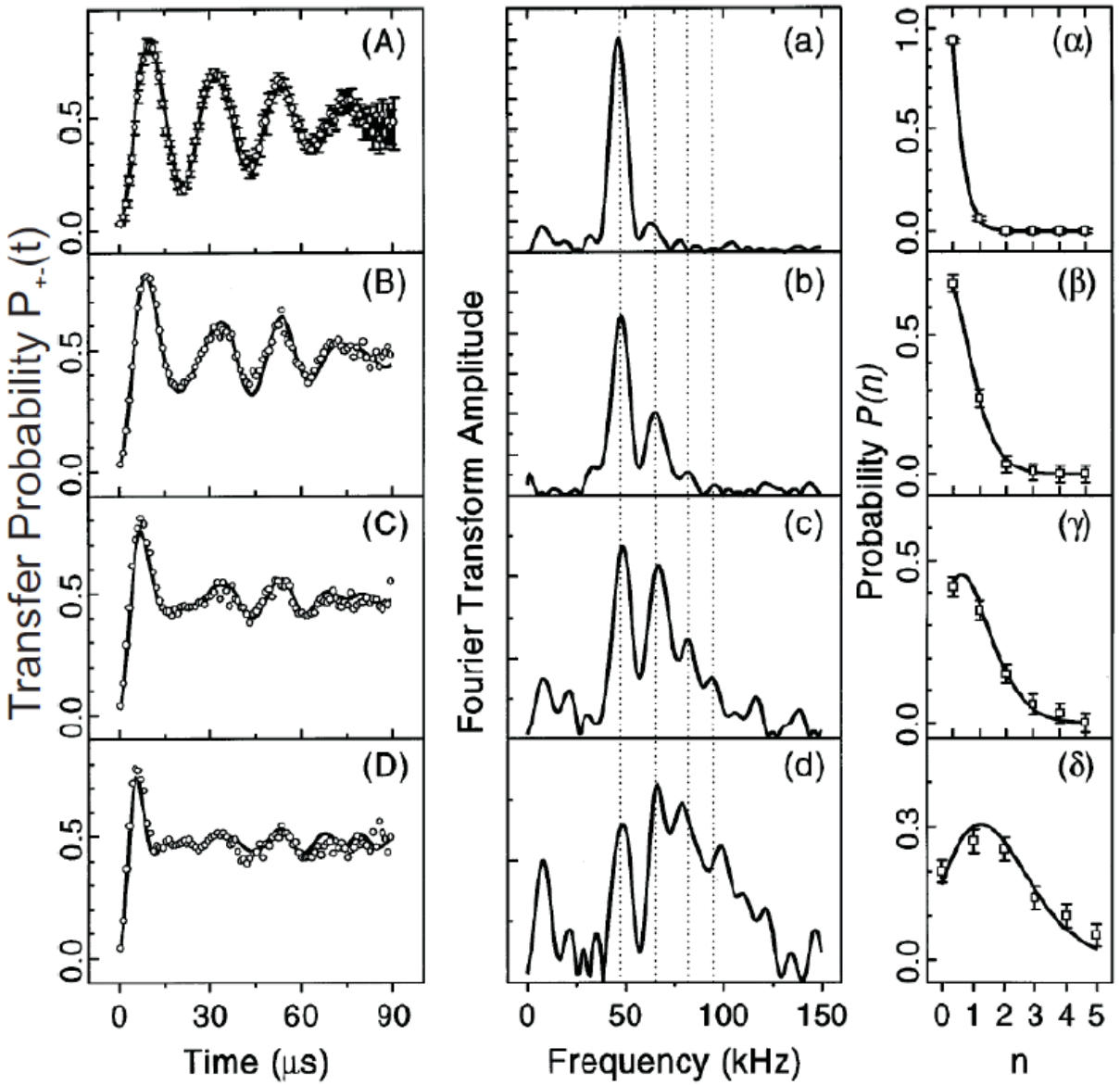
Qubit spectroscopy:
splitting in the strong coupling regime

A. D. O'Connell,… John M. Martinis & A. N. Cleland, Nature **464**, 697 (2010)

Haroche experiment, 1996



Haroche experiment, 1996



VOLUME 76, NUMBER 11 PHYSICAL REVIEW LETTERS 11 MARCH 1996

Quantum Rabi Oscillation: A Direct Test of Field Quantization in a Cavity

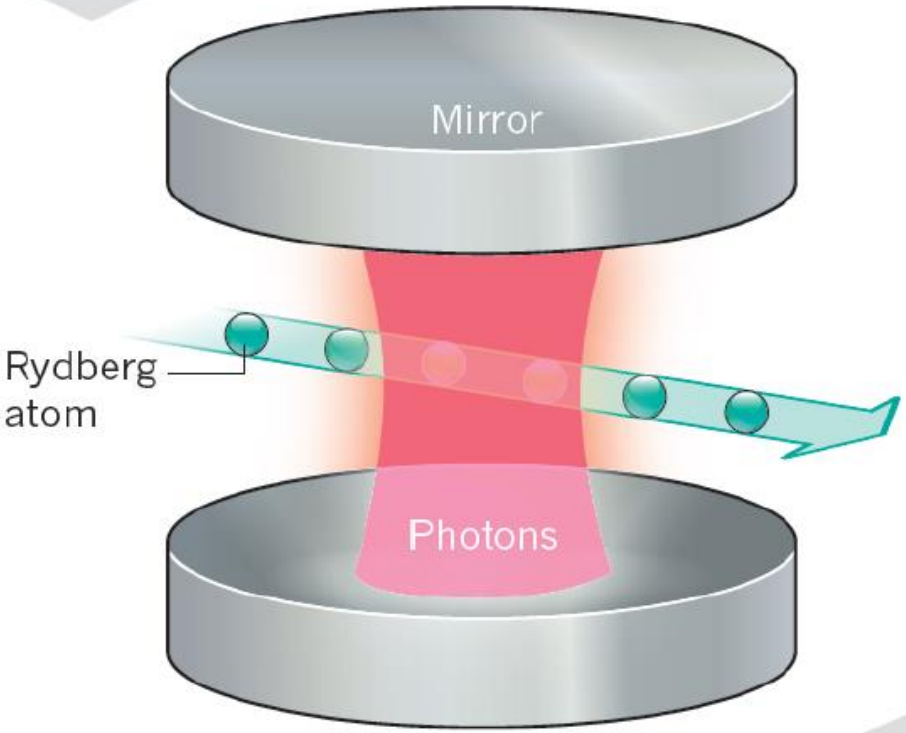
M. Brune, F. Schmidt-Kaler, A. Maali, J. Dreyer, E. Hagley, J. M. Raimond, and S. Haroche
Laboratoire Kastler Brossel, Département de Physique de l'Ecole Normale Supérieure, 24 rue Lhomond, F-75231 Paris Cedex 05, France*
(Received 9 November 1995)

	$\alpha = 0.63$	Mesuré (β)	$\alpha = 0.92$	Mesuré (γ)	$\alpha = 1.33$	Mesuré (δ)
$p(0)$	0.67	0.69	0.43	0.42	0.17	0.2
$p(1)$	0.26	0.28	0.36	0.35	0.30	0.27
$p(2)$	0.05	0.03	0.15	0.15	0.27	0.25
$p(3)$	$\leq 10^{-2}$	0	0.04	0.05	0.15	0.13
$p(4)$	$\leq 10^{-3}$	0	0.01	0.02	0.07	0.1
$p(5)$	$\leq 10^{-4}$	0	0	0	0.025	0.06

Nobel Prize 2012 *"for ground-breaking experimental methods that enable measuring and manipulation of individual quantum systems"*

HAROCHE METHOD

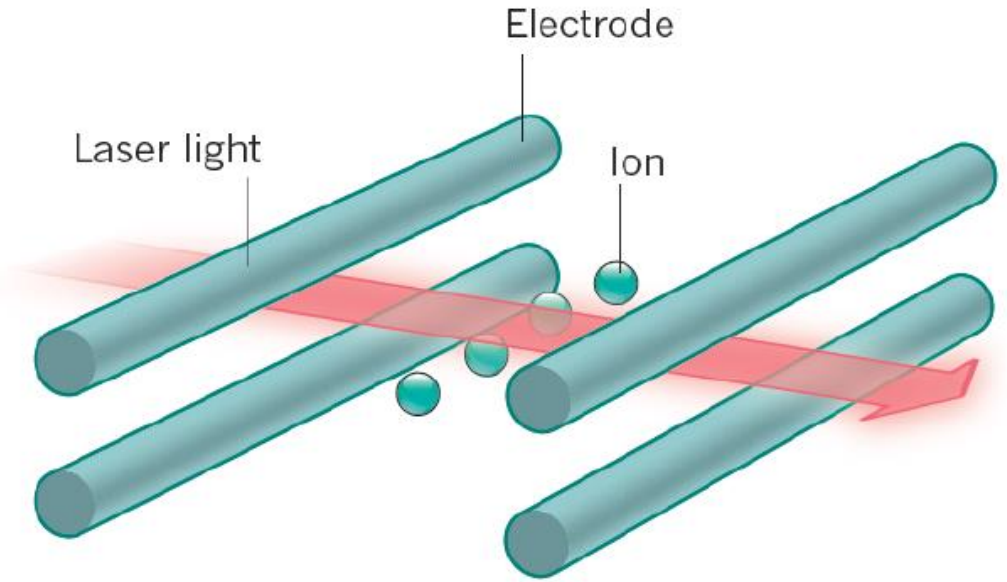
Microwave photons are placed between two highly reflective mirrors that enable an individual photon to bounce back and forth between them many times.



Rydberg atoms, which have one electron in a high-energy level, are sent through the system to measure and manipulate the photon's quantum state.

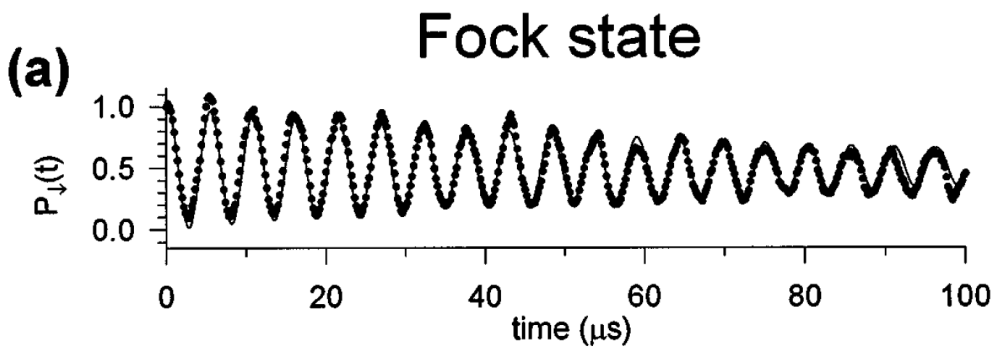
WINELAND METHOD

An electric field produced by an arrangement of electrodes holds one or several ions inside a trap.



Laser light is shone on the ion, suppressing its thermal vibration and allowing its quantum state to be measured and controlled.

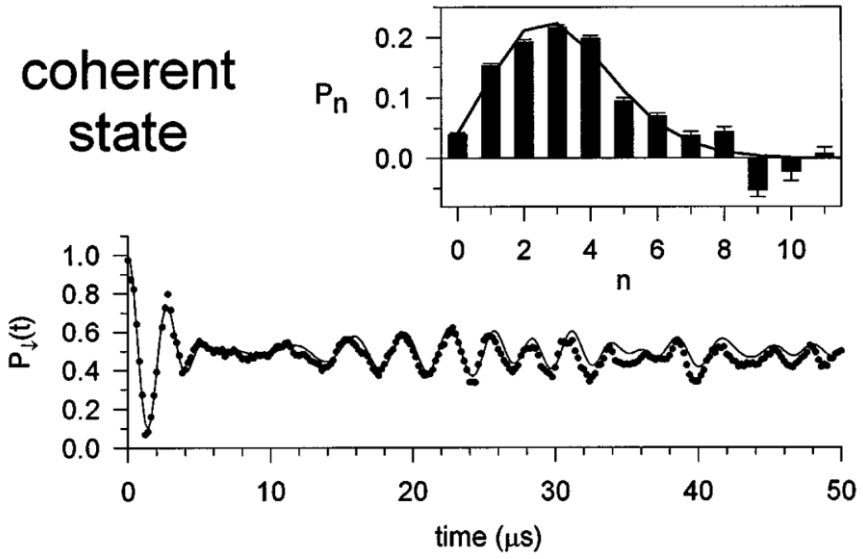
Wineland experiment, 1996

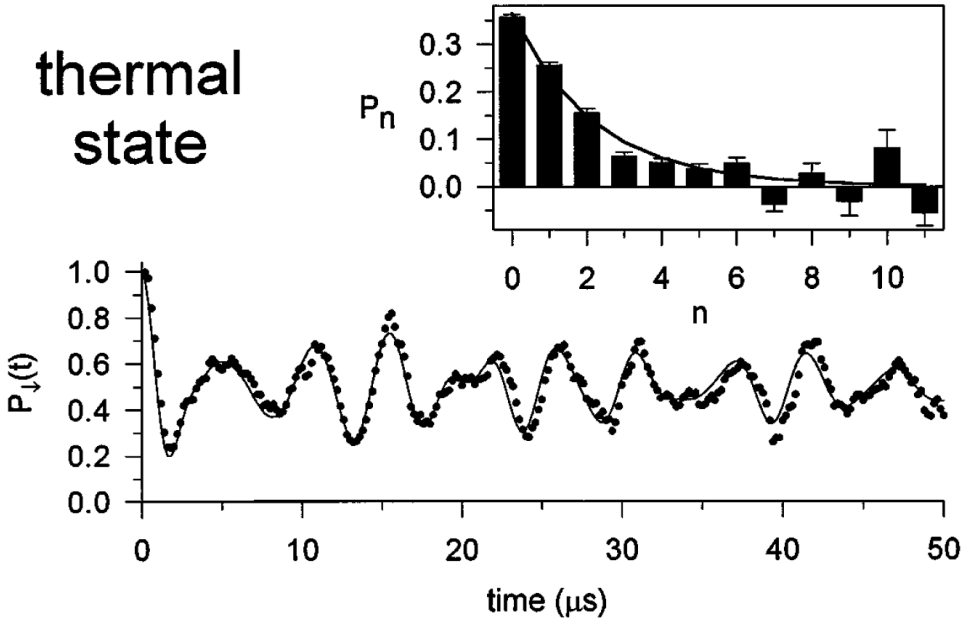


VOLUME 76, NUMBER 11 PHYSICAL REVIEW LETTERS 11 MARCH 1996

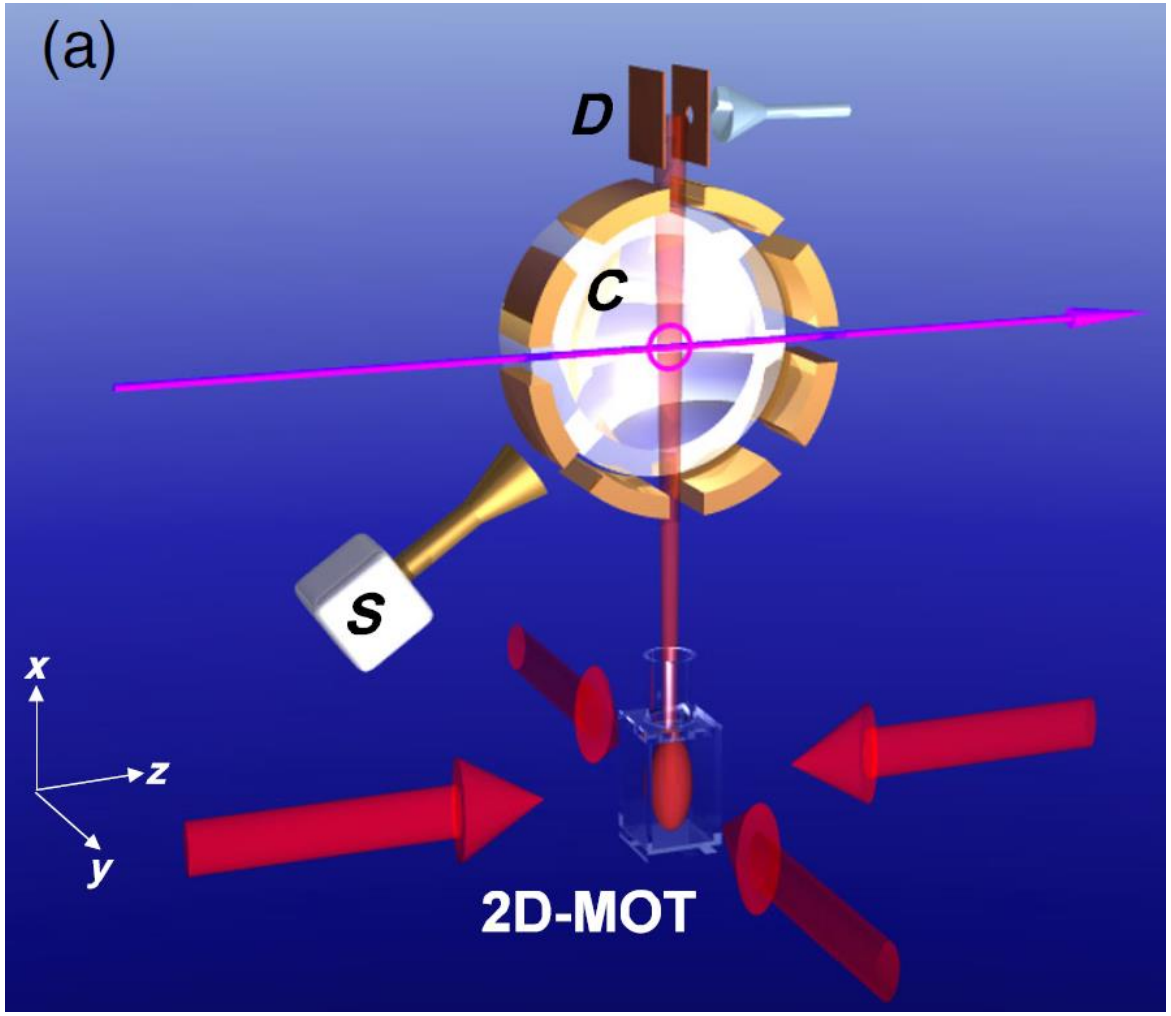
Generation of Nonclassical Motional States of a Trapped Atom

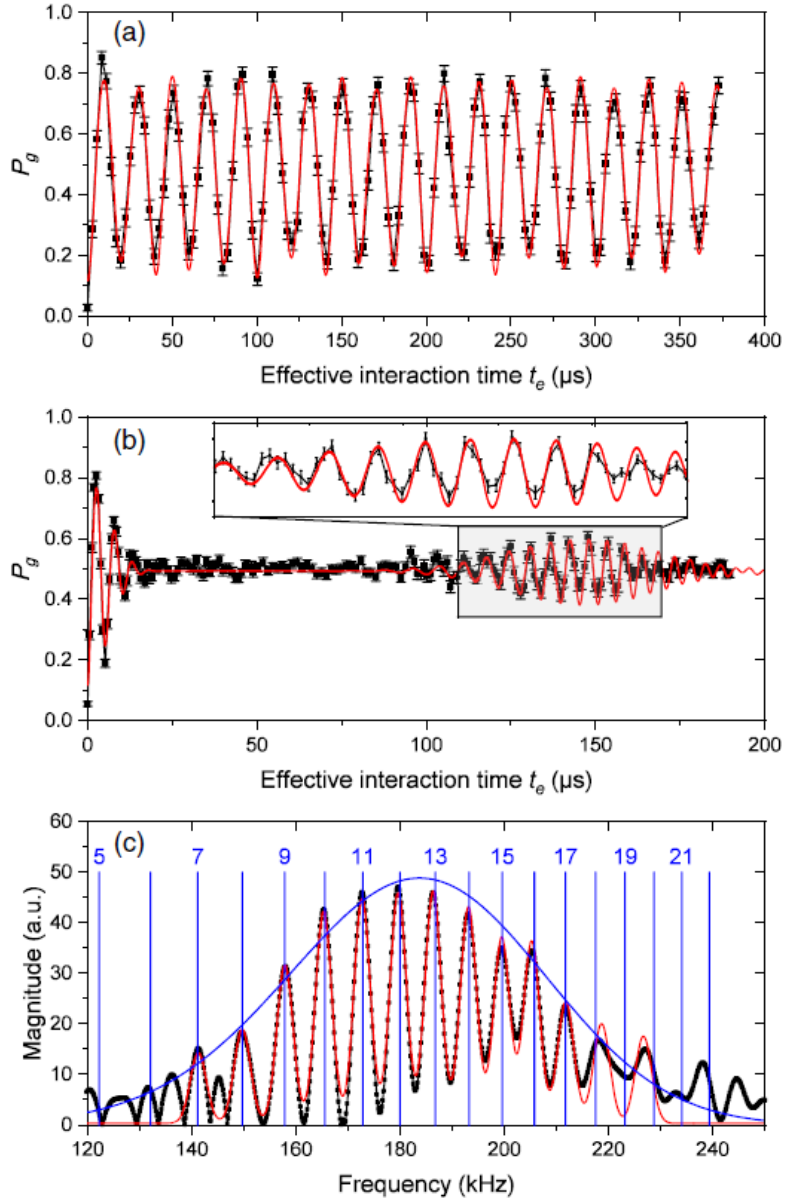
D. M. Meekhof, C. Monroe, B. E. King, W. M. Itano, and D. J. Wineland
Time and Frequency Division, National Institute of Standards and Technology, Boulder, Colorado 80303-3328
(Received 11 October 1995)



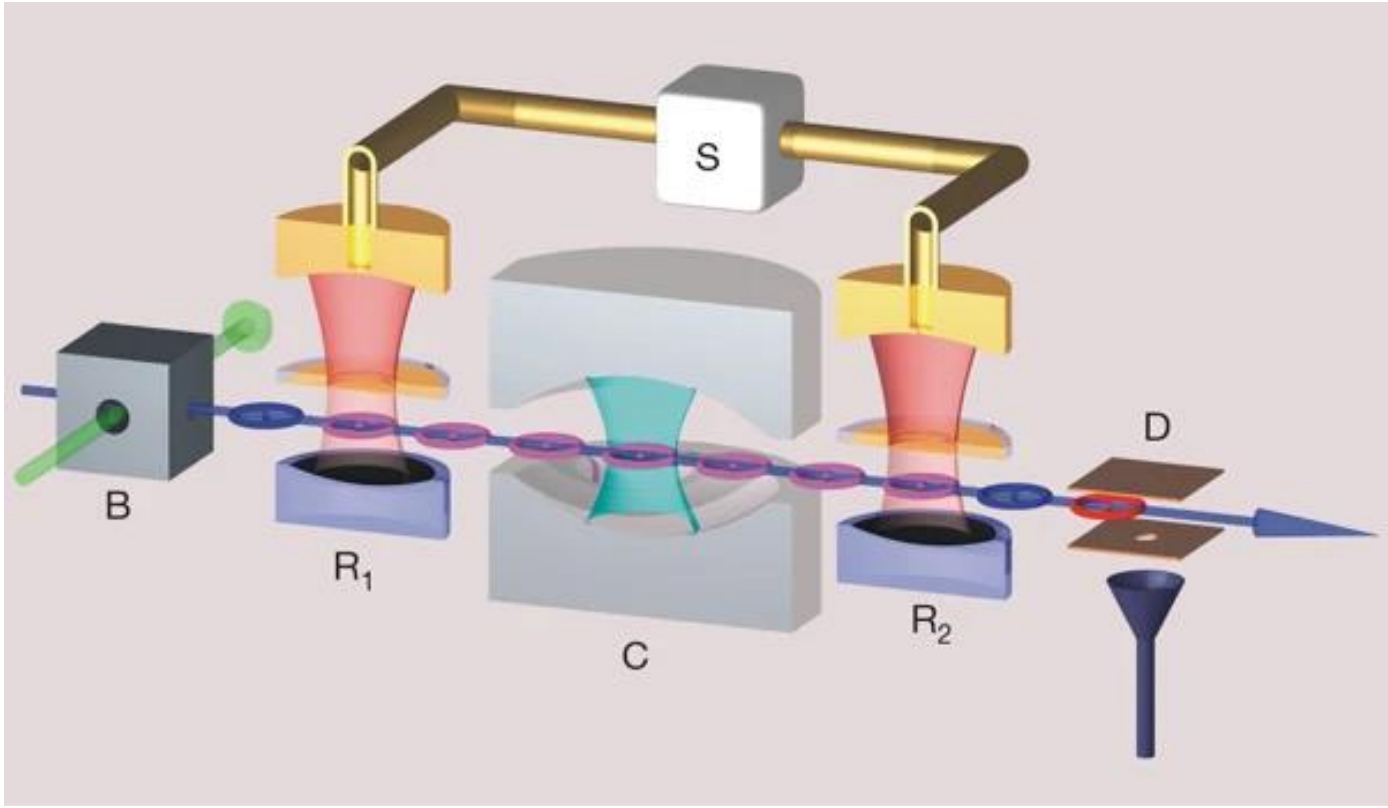


Haroche experiment, 2019



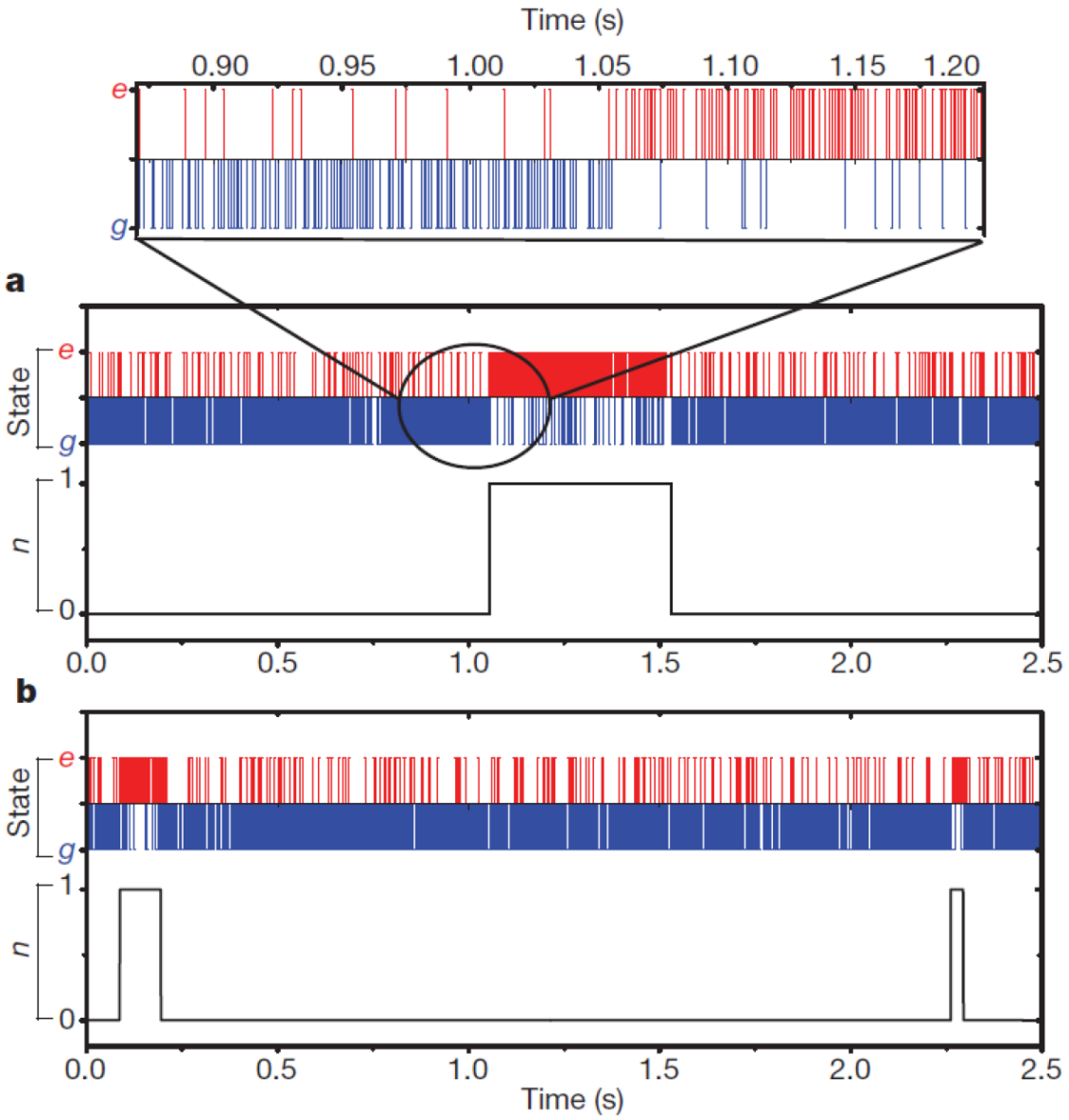


Haroche experiment, 2007



S. Gleyzes... & S. Haroche, *Quantum jumps of light recording the birth and death of a photon in a cavity*, Nature **446**, 297 (2007)

Haroche experiment, 2007



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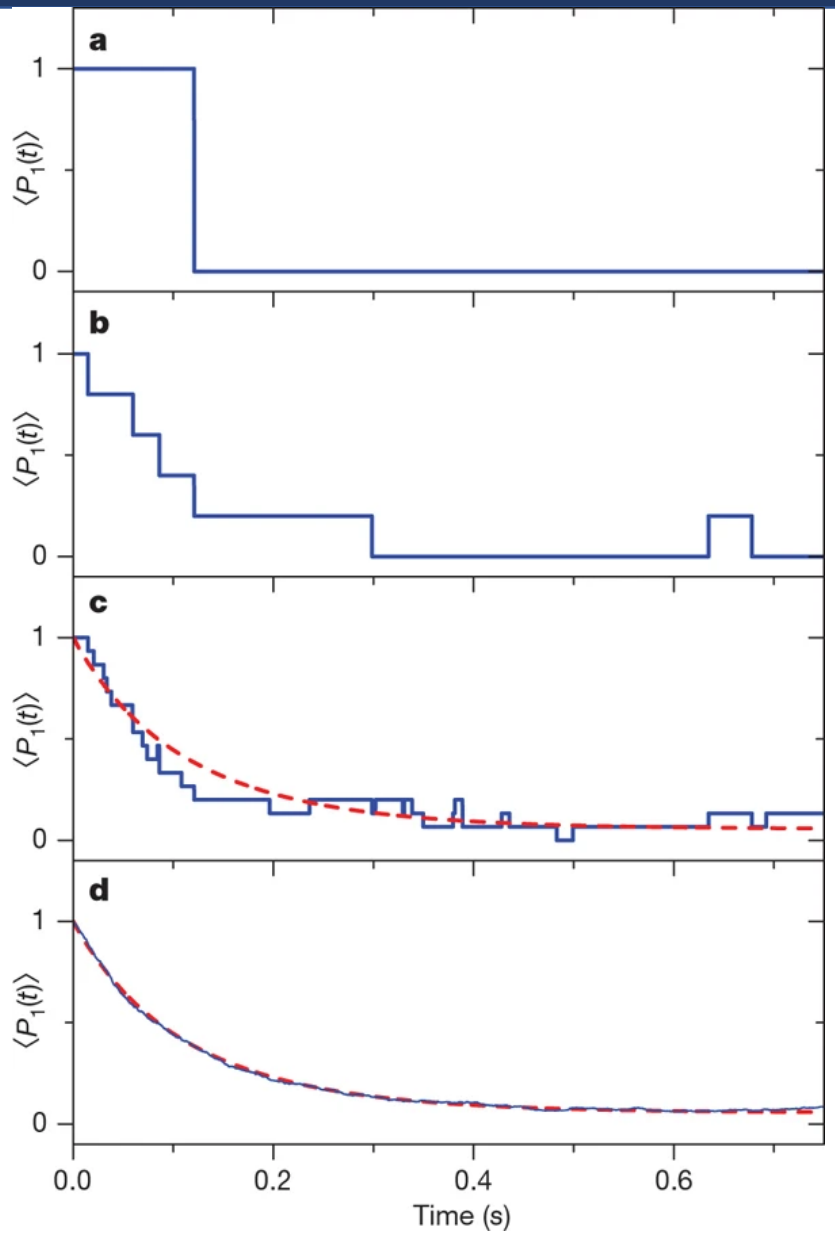

S. Gleyzes... & S. Haroche, *Quantum jumps of light recording the birth and death of a photon in a cavity*, Nature **446**, 297 (2007)