



**5th International Summer School
of the SFB/TRR21
"Control of Quantum Correlations in Tailored Matter"
Heinrich-Fabri-Haus, Blaubeuren
July 30 - August 01, 2012**

Chair: T. Calarco, S. Huelga

Scientific Topics:

Quantum Metrology

Speaker:

Carlton Caves, University of New Mexico

Topic:

Quantum metrology: An information-theoretic perspective

Quantum Communication

Speakers:

Nicolas Gisin, Université de Genève

Philippe Grangier, Université Paris Sud

John Rarity, University of Bristol

Topics:

Quantum Communication: Quantum Key Distribution and Quantum repeaters (Gisin)

Nonlocality (Gisin)

Quantum communications with continuous variables (Grangier)

Non-deterministic noiseless amplification: implementation and applications (Grangier)

Experimental quantum photonics (Rarity)

Quantum Optics in wavelength scale structures (Rarity)

Poster Session:

Presentations by the students of the SFB/TRR21

Co.Co.Mat Award:

Award by the SFB/TRR21 for last year's best PhD Thesis

Overview:

Mo 30.07.	Speaker	Tue, 31.07.	Speaker	Wed, 01.08.	Speaker
	<i>Arrival</i>	9:00-10:30	J. Rarity Experimental quantum photonics (Tutorial) <i>Discussion</i>	9:00-12:00	Excursion
		10:30-11:00	Coffee Break		
		11:00-12:00	P. Grangier Non-deterministic noiseless amplification : implementation and applications <i>Discussion</i>		
12:00-13:30	Lunch	12:00-13:30	Lunch	12:00-13:30	Lunch
13:30-15:00	N. Gisin Quantum Communication: Quantum Key Distribution and Quantum repeaters (Tutorial) <i>Discussion</i>	13:30-14:30	S. Huelga Quantum metrology in Noisy Environments (Tutorial) <i>Discussion</i>	13:30-14:00	Final Discussion with SFB PhD's
15:00-15:20	Coffee Break	14:30-15:00	Coffee Break		Departure
15:20-17:20	C. Caves Introduction to quantum metrology (Tutorial)	15:00-16:00	J. Rarity Quantum Optics in wavelength scale structures (Talk) <i>Discussion</i>		
17:20-17:40	Coffee Break	16:00-16:45	Co.Co.Mat award		
17:40-19:10	P. Grangier Quantum communications with continuous variables	16:45-17:15	Coffee Break		
		17:15-19:00	Poster Session begins		
19:10-20:15	Dinner	19:00-20:00	Dinner		
20:15-21:15	N. Gisin Nonlocality	20:00-open end	Poster Session continues		