Summer school ”Rare earth information processing” (Aug 26-29)

	Tuesday August 26th	*Wednesday August 27th*	*Thursday August 28th*	*Friday August 29th*
9	**Klaus Mølmer**	**Krishna Mohan**	**Henning Weier**	Reports from Marie Curie Fellows
9.45	Coffee Break	Coffee Break	Coffee Break	Coffee Break
10	**Klaus Mølmer**	**Krishna Mohan**	Xiao Liu, USTC, Hefei + *CIPRIS reports*	Reports from Marie Curie Fellows
10.45	Fruit Break	Fruit Break	Fruit Break	Fruit Break
11	**Andrei Faraon**, Caltech **Jarryd Pla**, UCL, London	*Round table discussion on material issues*	**Schwefel/Förtsch**, MPQ **Sarah Beavan**, LMU	Reports from Marie Curie Fellows
12	Lunch	Lunch	Lunch	Lunch
14	**David Leibrandt**	**Jevon Longdell**	Reports from Marie Curie Fellows	
14.45-15.15	Coffee Break	Coffee Break	Coffee Break	
15.15	**David Leibrandt**	**Jevon Longdell**	Reports from Marie Curie Fellows	
16	Project	Project		
16.45	Fruit Break	Fruit Break		
17.15	Project	Project		
18-~19	Discussion of projects Mølmer/Leibrandt	Discussion of projects Mohan/Longdell		
19.30	Dinner	Dinner	Dinner	

In the project sessions each lecturer has defined a small number of problems/tasks to be solved by the participants in smaller groups. After two hours all the groups get together again and discuss their results with the lecturers.

The school has the following four lecturers

David Leibrandt, NIST, Boulder, *Optical clocks and laser stabilization using rare earth crystals*
Jevon Longdell, University of Otago, New Zeeland, *Echo techniques in Quantum information Processing*
Krishna Mohan Rupavatharam, Spectrum Lab, Bozeman, Montana, *Classical information processing*
Klaus Mølmer, Aarhus University, *Hybrid quantum systems – the challenge of coupling microscopic and macroscopic qubits*

Henning Weier, CEO QuTools, Münich will give a talk about *detectors for single photon applications*.

The four lecturers have suggested some reading material which the summer school participants would be expected to have looked at before the summer school.

Hot Topic talks (30 minutes including discussion)
Andrei Faraon, Caltech – *Coupling of rare-earth ions to nano-photonic optical resonators*
Jarryd Pla, UCL, London – *Single atom quantum bits in silicon*
Harald Schwefel/Michael Förtsch, Erlangen University/MPQ – *Producing narrowband entangled photon pairs from WGM cavities*
Sara Beavan, LMU Münich – *Rephased amplified spontaneous emission in Pr:YSO for quantum repeater applications*

Other talks (20 minutes including discussion)
Xiao Liu, USTC, Hefei – *Storing deterministic single photons emitted from a quantum dot in a solid-state quantum memory*
9 talks from CIPRIS groups (titles to be decided in August), at least partly presented by the CIPRIS fellows
1-2 additional talks from the CIPRIS groups (to be selected in August)

The round table discussion on materials will be organized by **Philippe Goldner**