

PCS

Photon Correlation and Scattering

Topical Meeting and Tabletop Exhibit

16-18 August 2004

[Royal Netherlands Academy of Sciences \(KNAW\)](#)
[Amsterdam, The Netherlands](#)
Het Trippenhuis
Kloveniersburgwal 29

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About PCS

Foreword

This Photon Correlation and Scattering (PCS) meeting welcomes all who are interested in the art and science of photon correlation and its application to optical scattering. The meeting is intended to enhance interactions between theory, applications, and instrument design.

Meeting Topics

- Astronomy
- Biological Applications / Biophotonics
- Complex fluids (gels, foams, and porous materials, liquid crystals, colloids and polymers)
- Correlated scattering in photonic materials
- Critical phenomena
- Diffusing wave spectroscopy
- Fluorescence correlation spectroscopy
- Gradient driven transport and fluctuations (e.g. all methods used for thermal diffusion, grating techniques (FTS, TDFRS) Soret feedback, thermal diffusion cells with optical detection ...)
- Microrheology
- Multiple scattering phenomena
- Multispeckle scattering
- Nearfield scattering
- Particle sizing and online detection systems
- Photon correlation intermittency studies
- Quantum Optics
- Scattering in a microscope
- Surface Light Scattering
- Velocimetry
- Weakly attractive systems

Invited Speakers

The preliminary list of invited speakers includes:

TuA1, **Discrete optical solitons in waveguide arrays and photonic lattices**, A. Apostol and A. Dogariu, *Univ. of Central Florida, USA*

MB1, **Avalanches in soft glassy materials**, Daniel Bonn, *Ecole Normale Supérieure, France*

MA2, **Nano-photonics for novel photon correlation technologies**, Robert G. W. Brown, *Queens Univ., Belfast, UK*

TuB2, **GRADFLEX, Fluctuations in microgravity**, A. Vailati, R. Cerbino, S. Mazzoni, M. Giglio, G. Nikolaenko, D. S. Cannell, W. V. Meyer, and A. E. Smart, *Univ. di Milano, Italy*

MA1, **Colloids, Candies, DNA: Packing, Pushing, and Pasting**, Paul M. Chaikin, *Princeton Univ., USA*

TuB1, **Smectic membranes in motion: The limits of x-ray photon correlation spectroscopy**, Wim de Jeu, *FOM-Institute for Atomic and Molecular Physics, The Netherlands*

MB4, **Re-entrant melting of colloidal hard spheres near a wall**, Roel P.A. Dullens and Willem K. Kegal, *Utrecht Univ., The Netherlands*

WA1, **Photon correlation spectroscopy using coherent x-rays**, Gerhard Gruebel, *HASYLAB at DESY, Germany*

MC1, **DLS and FCS on tracer spheres in concentrated rod dispersions**, K. Kang, J. Gapinski, M.P. Lettinga, J. Buitenhuis, G. Meier, Jan K.G. Dhont, A. Patkowski, *IFF Inst., Germany*

WA3, **Diffusing-wave spectroscopy as a probe for neuronal activity**, Georg Maret, *Univ. of Konstanz, Germany*

MD1, **Multiple light scattering probes of fluid and solid soft materials**, Frank Scheffold, *Univ. of Fribourg, Switzerland*

MC3, **Optics of photonic crystals**, Willem Vos and Ad Lagendijk, *Univ. of Twente, The Netherlands*

MD2, **Scattering probes of the growth and elasticity of colloidal gels**, David A. Weitz, *Harvard Univ., USA*

Publications

Conference Program

The Conference Program will be available on the web in late June 2004. Authors submitting papers, past meeting participants and current committee members will automatically be notified by email when the Conference Program goes live.

Technical Digest

The PCS Technical Digest will contain the camera-ready summaries of papers presented during the meeting. At the meeting, each registrant will receive a copy of the Technical Digest on CD-ROM and in print.

Current Exhibitors

Several companies plan to present their products and services and have generously provided funding for some of the special events.

[Brookhaven Instruments Corporation](#)

750 Blue Point Road
Holtsville, NY 11742-1832
P: 631.758.3200 ext. 105
F: 631.758.3255
Email: wtscharnuter@BIC.Com
Dr. Walther W. Tscharnuter

[Correlator.com](#)

15 Colmart Way
Bridgewater, NJ 08807
P: 908.725.1244
F: 908.725.9851
Email: Jixiang@correlator.com
Dr. Jixiang Zhu

[Ocean Optics](#)

Nieuwgraaf 108G (sectie 22)
6921 RK Duiven
The Netherlands
P: +31 26 3190500
F: +31 26 3190505
Email: info@oceanopticsbv.com
Imar van Riet

[Particle Sizing Systems](#)

75 Aero Camino
Santa Barbara, CA 93117
P: 805-968-1497 or +31 78 631 2406
F: 805-968-0361 or +31 78 618 8859
Email: dave@pssnicomp.com or
Email: psseuro@worldonline.nl

Agenda of Sessions

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- [Monday, August 16, 2004](#)
- [Tuesday, August 17, 2004](#)
- [Wednesday, August 18, 2004](#)

Monday , 16 August

Speaker Code	Time	Event	Presentation Title
	8:00 - 17:00	Registration Open, Tinbergen Room Foyer	
MA	9:00 - 10:20	Introduction and Colloidal Systems 1 Presider, Gerard Wegdam, <i>Univ. of Amsterdam, The Netherlands</i> <i>Tinbergen Room</i>	
MA1	9:00 - 9:50	INVITED: Paul Chaikin, <i>Princeton Univ., USA</i>	Colloids, candies, DNA: Packing, pushing, and pasting
MA2	9:50 - 10:20	INVITED: Robert G. W. Brown, <i>Queens Univ. Belfast, UK</i>	Nano-photonics for novel photon correlation technologies
	10:20 - 10:40	Coffee Break	
	10:30 - 16:00	Exhibit Open	
MB	10:40 - 12:20	Colloidal Systems 2 Presider, Jan Dhont, <i>IFF Inst., Germany</i> <i>Tinbergen Room</i>	
MB1	10:40 - 11:10	INVITED: Daniel Bonn, <i>Ecole Normale Supérieure, France</i>	Avalanches in soft glassy materials
MB2	11:10 - 11:30	1 S. Jabbari-Farouji, E. Eiser, G. Wegdam and D. Bonn	Aging dynamics of translational and rotational diffusion in a colloidal glass
MA3	11:30	R. Cerbino, S. Mazzoni, A. Vailati	Shadowgraphic study of

	- 11:50	and M. Giglio	convection onset in a colloidal suspension
MB4	11:50 - 12:20	INVITED: Roel P.A. Dullens and Willem K. Kegel, <i>Utrecht Univ., The Netherlands</i>	Re-entrant melting of colloidal hard spheres near a wall
	12:20 - 13:50	Lunch Break (on own)	
MC	13:50 - 15:10	Colloidal Systems 3 Presider, David Weitz, <i>Harvard Univ., USA</i> <i>Tinbergen Room</i>	
MC1	13:50 - 14:20	INVITED: K. Kang, J. Gapinski, M.P. Lettinga, J. Buitenhuis, G. Meier, Jan K.G. Dhont and A. Patkowski, <i>IFF Inst., Germany</i>	DLS and FCS on tracer spheres in concentrated rod dispersions
MC2	14:20 - 14:40	Carlos A. Rega and Robert O. Jack	Effect of electrolyte concentration on the hydrodynamic radius of polymer lattices as measured with PCS
MC3	14:40 - 15:10	INVITED: Willem Vos and Ad Lagendijk, <i>Univ. of Twente, The Netherlands</i>	Optics of Photonics Crystals
	15:10 - 15:30	Coffee Break	
MD	15:30 - 16:20	Colloidal Systems 4 Presider, Paul Chaikin, <i>Princeton Univ., USA</i> <i>Tinbergen Room</i>	
MD1	15:30 - 16:00	INVITED: Frank Scheffold. <i>Univ. of Fribourg, Switzerland</i>	Multiple light scattering probes of fluid and solid soft materials
MD2	16:00 - 16:30	INVITED: David A. Weitz, <i>Harvard Univ., USA</i>	Scattering probes of the growth and elasticity of colloidal gels
	17:15	Van der Waals-Zeeman Laboratory Tour Departure	
	19:00 - 22:00	Conference Dinner, Artis Zoo	

Tuesday, 17 August

Speaker Code	Time	Event	Presentation Title
	8:00 – 13:00	Registration Open, Tinbergen Room Foyer	
TuA	9:00 - 10:50	Near Field Scattering Presider, Marzio Giglio, <i>Univ. di Milano, Italy</i> <i>Tinbergen Room</i>	
TuA1	9:00 – 9:30	INVITED: A. Apostol and A. Dogariu, <i>Univ. of Central Florida, USA</i>	Statistics of optical near-fields
TuA2	9:30 – 9:50	Marco A. C. Potenza. Dorian Brogioli, Alberto Vailati and Marzio Giglio	Near field scattering
TuA3	9:50 – 10:10	E.M. Kim, S.S. Elovikov, D.A. Muzychenko and O.A. Aktsipetrov	Mechanism of giant enhancement of hyper-rayleigh scattering in silver nanostructures
TuA4	10:10 – 10:30	O.A. Aktsipetrov , S.S.Elovikov, E.M. Kim, M.A. Bader and G. Marowsky	Giant third-harmonic generation in silver nanoparticles: New type of hyper-Rayleigh scattering
TuA5	10:30 – 10:50	J. Adin Mann and Massood Tabib-Azar	A near-field microwave microscope and electron spin resonance detection
	10:50 – 11:10	Coffee Break	
	11:00 - 14:00	Exhibit Open	
TuB	11:10 - 12:50	Fluctuations in Fluids Presider, Anthony Smart, <i>Consultant, USA</i> <i>Tinbergen Room</i>	
TuB1	11:10 – 11:40	INVITED: Wim H. de Jeu, <i>FOM-Inst. for Atomic and Molecular Physics, The Netherlands</i>	Smectic membranes in motion: The limits of x-ray photon correlation spectroscopy
TuB2	11:40 – 12:10	INVITED: A. Vailati, R. Cerbino, S. Mazzoni, M. Giglio, G. Nikolaenko, D. S. Cannell, W. V. Meyer, and A. E. Smart, <i>Univ. di Milano, Italy</i>	GRADFLEX, Fluctuations in microgravity

TuB3	12:10 – 12:30	Fabrizio Croccolo, Doriano Brogioli, Alberto Vailati, David S. Cannell and Marzio Giglio	Dynamics of gradient driven fluctuations in a free diffusion process
TuB4	12:30 – 12:50	William V. Meyer, J. Adin Mann and Gerard H. Wegdam	Surface response functions for a thin-film between fluids with infinite boundaries and for a fluid-fluid interface between finite boundaries
	12:50	Lunch Break (on own)	
	14:40	Group photograph for Applied Optics. Kit Meader, Official PCS 2004 Photographer	
	15:00 – 17:00	Group Canal Tour of Amsterdam	

Wednesday , 17 August

Speaker Code	Time	Event	Presentation Title
	8:00 - 16:00	Registration Open, Tinbergen Room Foyer	
WA	9:00 - 10:10	Photon Scattering Presider, Aristide Dogariu, <i>Univ. of Central Florida, USA</i> <i>Tinbergen Room</i>	
WA1	9:00 – 9:30	INVITED: Gerhard Grubel, <i>HASYLAB at DESY, Germany</i>	Photon correlation spectroscopy using coherent x-rays
WA2	9:30 – 9:50	Régis Sarcia and Pascal Herbraud	Using diffusing-wave spectroscopy to study intermittent dynamics
WA3	9:50 – 10:20	INVITED: Georg Maret, <i>Univ. Konstanz, Germany</i>	Diffusing-wave spectroscopy as a probe for neuronal activity
	10:20 – 10:40	Coffee Break	
	10:30 - 14:00	Exhibit Open	A near-field microwave microscope and electron spin resonance detection
WB	10:40 - 12:00	Photon Scattering Presider, E. Roy Pike, <i>King's College, UK</i> <i>Tinbergen Room</i>	

WB1	10:40 – 11:00	Scott Roger Shepard	A fuzzy simultaneous measurement of two polarization vector components
WB2	11:00 – 11:20	O.V.Angelsky, Ye.G.Ushenko, Yu.A.Ushenko and A.G.Ushenko	Fractal structure of biotissues polarization properties
WB3	11:20 – 11:40	O.V.Angelsky, Ye.G.Ushenko, Yu.A.Ushenko and A.G.Ushenko	2-D Stokes-correlometry of biotissues images in pre-clinic diagnostics of their pre-cancer states
	11:40 – 13:30	Lunch Break (on own)	
WC	13:30 – 14:50	Correlation in Optical Fields President: Robert Brown, <i>Queen's Univ., Belfast, UK</i> <i>Tinbergen Room</i>	
WC1	13:30 – 13:50	J. Ellis and A. Dogariu	Higher-order correlations in speckle fields
WC2	13:50 – 14:10	R. Andrews, E. R. Pike and Sarben Sarkar	Coupling of correlated entangled photons into single-mode optical fibers
WC3	14:10 – 14:30	Takashi Okamoto, Hiroyuki Gotou, Tatsuya Yonemori and Yasuaki Kawabata	Spatial properties of a superposed speckle field and its application to the fabrication of random laser media
	14:30 – 14:50	Coffee Break	
WD	14:50 – 15:30	Correlation in Optical Fields President, William Meyer, <i>NCMR/NASA Glenn Research Ctr., USA</i> <i>Tinbergen Room</i>	
WD1	14:50 – 15:10	O.V. Angelsky, A.P. Maksimyak and P.P. Maksimyak	On the prospects of diagnostic of wave dislocation obtained in light
WD2	15:10 – 15:30	O.V. Angelsky, P.P. Maksimyak, A.P. Maksimyak, S.G. Hanson and Yu.A. Ushenko	The role of caustics in formation of network of amplitude zeroes for partially developed speckle field
		Please note that a couple of the	

		<i>presentations have been placed in time slots optimized for their schedule and not necessarily their session topic.</i>	
		POSTER PRESENTATIONS <i>(displayed concurrent with the exhibition times)</i>	
		L.I. Podkamen, A.D. Arkhelyuk and O.O. Arkhelyuk	Estimation of optical-geometrical parameters of nonspherical particles in polarized light
		Sándor Balog, Juan José Sáenz, and Frank Scheffold	A PCS study of correlations and fluctuations in the laser speckle pattern
		M. S. Dioujeva and V. V. Klyubin	Measurement of the dispersity of multicomponent mixtures of monodisperse latexes by the dynamic light scattering method
		M.S.Gavrylyak, V.S.Lomanets and P.P. Maksimyak	The investigation of chaos in the field of optical radiation scattered by liquid crystals
		Michael P. Doherty, Subramanian Sankaran, and William V. Meyer	Physics of Colloids in Space Experiment on the International Space Station