

SPACE, TIME AND BEYOND

International Symposium of Science, Technics and Aesthetics, Lucerne Theatre

January 18-19, 2003

Organized by: New Gallery Lucerne

Introduction

I think it is safe to say that no one understands quantum mechanics.

(R.P. Feynman, Nobel-Prize-winning physicist, 1973)

A scientific world-view which does not profoundly come to terms with the problem of conscious minds does not have serious pretensions of completeness.

(Sir Roger Penrose, mathematician, University of Oxford/UK)

Our notions of space and time figure prominently in our map of reality. They serve to order things and events in our environment and are therefore of paramount importance not only in our everyday life, but also in our attempts to understand nature through science and philosophy. There is no law of physics which does not require the concepts of space and time for its formulation. However, we have no direct sensory experience of four-dimensional space-time, nor of the other relativistic concepts. Whenever we study natural phenomena involving high velocities, we find it very hard to deal with these concepts both at the level of intuition and ordinary language. As Anton Zeilinger pointed out, the discussion of the "paradox" argued by Einstein, Podolsky and Rosen in 1935 and Bell's inequalities is still alive even after many experimental tests of increasing accuracy (check out the Physics FAQ for a more thorough description of the problem). - Are there fundamental limits to what can be said about the world? Do we need - as some physicists suggest - to extrapolate quantum theory to the elements of space-time?

The problem of relating the mental and physical sides of reality has long been a key one, especially in Western philosophy. What are the foundations of cognition and experience in the natural sciences? Through the careful study of atomic processes, quantum physics has raised deep epistemological and ontological questions, which are addressed with great sophistication and profundity in this meeting from various scientific perspectives and in different interdisciplinary approaches. The eastern spiritual traditions show their followers various ways of going beyond the ordinary experience of time and of freeing themselves from the chain of cause and effect - from the bondage of karma, as the Hindus and the Buddhists say. Is Eastern mysticism therefore a 'liberation from time'? Can the same be said in a way of relativistic physics? What is the relationship between the observer and observed in both the Tibetan Buddhist and Western scientific/philosophical understanding? How does the material world come into existence? In what sense are the properties of an object inherent, or,

alternatively, do they arise through the act of observation? Is consciousness a physical process and connected to physics?

Key-Words

Altered states of consciousness and the experience of time; Bell's theorem; black hole theory; black holes and time warps; complementarity; the concept of a "self"; Copenhagen interpretation of quantum mechanics; Gödel's theorem; gravitation and cosmology; interface-reality and interface-physics; mathematics; non-computational physics; (micro)-relativity and (micro)-constructivism; physics and buddhism, quantum mechanics and quantum consciousness; quantum mechanics and reality, quantum relativity; quantum theory and measurement; space-time and consciousness; space-time and quantum theory; superluminal information transfer theory, teleportation theory, time reversability and irreversability

Key-Note Speakers

PROF. DR. **PETER C. BEAMISH**, Whale Research, Ceta-Research Inc., Trinity/NF

PROF. DR. **GREGORY BENFORD**, Plasma Physics and Astrophysics, University of California, Irvine / USA

PROF. DR. **DAVID R. FINKELSTEIN**, Physics, Georgia Institute of Technology, School of Physics, Atlanta / USA

PROF. DR. **BASIL J. HILEY**, Theoretical Physics, Birkbeck College, University of London

PROF. DR. **BENNY SHANON**, Psychology, The Hebrew University, Jerusalem

PROF. DR. **HENRY P. STAPP**, Physics, University of California, Berkeley / USA

PROF. DR. **MATT VISSER**, Mathematics, Victoria University of Wellington, New Zealand

DR. **ALAN WALLACE**, Philosophy and Physics, Mind and Life Institute, Boulder / USA

Chairmen /Chairwoman

Paneldiscussions:

PROF. DR. **JOSEF MITTERER**, Philosophy, University of Klagenfurt (1/18/03)

and DR. **ALAN WALLACE** (1/19/03).

Key-Note-Lectures:

PROF. DR. **RUTH DURRER**, Theoretical Physics, Département de Physique Théorique, Université de Genève

DR. **ROGER G. UCHTMANN**, Sciences of Communication and Anthropology, Centro Interdisciplinar de Semiótica da Cultura e da Mídia (CISC), Pontifícia Universidade Católica de São Paulo

PROF. DR. **OTTO E. RÖSSLER**, Theory of Chaos, University of Tübingen

and PROF. DR. **DAVID R. FINKELSTEIN**; PROF. **DR. HENRY P. STAPP**; DR. **ALAN WALLACE**.

Presenters

CHAR DAVIES, Media Artist, Montreal

MICHAEL SNOW, Painter, Filmmaker, Photographer, Writer, Musician, Toronto

Key-Note Speakers, Chairmen, Chairwoman

PROF. DR. PETER C. BEAMISH

Walforschung / Whale Research

Ceta-Research Inc.

Trinity/NF, Kanada

www.animalcontact.com

Peter Beamish has been dedicated to the scientific research of "Communications and Time" for many decades, following his doctorate degree in biophysics at the University of British Columbia under Dr. Robert Stewart. Postgraduate studies at the Massachusetts Institute of Technology under Drs. Hersey, Schrock and Edgerton involved marine acoustics, theoretical physics and the 20th century physics of time. Recent collaboration with Dr. Hitoshi Kitada of the University of Tokyo, et al., and, critical human-animal, experimental, cetacean studies have revealed distinct differences between the biophysics of a novel second temporal concept: " $\text{TimeT} = \pm \exp\{i(2\pi)Ht/h\}$ " and conventional time ("ct" or t) used in Relativity Theory and worldwide physics courses. Dr. Beamish has published over 100 papers and several books, most recently: "*TIME" beyond "conventional time"*" (ISBN-0-9689955) including over 200 new concepts in biophysics and an extensive glossary. Non academic interests include: music, sailing, skiing, teaching, squash, chess, bridge, photography, youth careers in human-animal communications research and international cooperation. Dr. Beamish married Christine Farmer of the U.K. and they have two sons, Nicholas and Timothy with careers in medical and computer sciences respectively. Dr. Beamish has had a lifetime of both biophysics and cetology, discovering "symbiotic sonar" in Megaptera (humpbacks), unique behavior in L. sp

(Antarctic hourglass dolphins) and acoustic weapons in *B. musculus/acutorostrata* (blues/minkes).

PROF. DR. GREGORY BENFORD

Plasma Physik und Astrophysik

Plasma Physics and Astrophysics

University of California, Irvine

www.ps.uci.edu/physics/benford.html

Gregory Benford is the award-winning author of such novels as *Timescape*, *Against Infinity*, *In the Ocean of Night*, *Artifact* and *Great Sky River*. He's also written excellent short fiction (some of which is collected as in *Alien Flesh*) and has co-edited a number of anthologies, including *Hitler Victorious* and the three volumes of the *What Might Have Been - Series*. Benford is a professor of physics at the University of California, Irvine. He is a Woodrow Wilson Fellow, has been a Visiting Fellow at Cambridge University and received the Lord Prize for achievements in the sciences in 1995. *Deep Time: How Humanity Communicates Across Millennia* is his first book of nonfiction. One of Benford's most important contributions has been to expand the way science fiction represents the contexts out of which scientific understanding emerges, the competing priorities and paradigms that govern which secrets are uncovered and what insights are ignored. Benford, who teaches Plasma Physics and Astrophysics knows those contexts intimately. For Benford, science is founded in human experience, human knowledge, human perspectives, and human biases. His scientists struggle to focus on technical problems amid complex personal relationships, try to isolate the challenges of the laboratory from the difficulties of the bedroom or from the tensions between mothers and sons, and yet, often, the insights which generate their scientific discoveries come to them from spaces far removed from their experimental apparatus.

CHAR DAVIES

Medien- und Kunsttheorie

Media- and Art Theory

Montreal

www.immersence.com

Char Davies' immersive virtual environments are internationally recognized as landmarks in the field of interactive media art. Integrating full-body immersion, navigation based on breathing and balance, and interactive 3-D digital imagery and sound, her works are known for challenging conventional thinking about virtual space. Her work in this medium is based on two decades of artistic research into nature, psyche, and perception, and is motivated by a quest to collapse Cartesian boundaries between subject/object, interior/exterior, self and

world. Originally a painter and filmmaker, she became involved in digital technology in the mid '80s, becoming a founding director of the highly successful 3D software company Softimage. Davies has exhibited her work at numerous museums and galleries around the world, and has written and lectured widely, including at the 16th Annual Darwin College Lecture Series, Space 2001, at Cambridge University. She has received numerous awards, most recently an Honorary Doctorate of Fine Arts from the University of Victoria, British Columbia. Davies is a Visiting Scholar at the University of California - Berkeley, and a Ph.D Fellow in the Philosophy of Media Arts, at CAiiA: Centre for Advanced Inquiry in the Interactive Arts, University of Wales College, Wales. She is currently developing new work through her Montreal-based research company Immersence.

PROF. DR. RUTH DURRER

Theoretische Physik

Theoretical Physics

Département de Physique Théorique

Université de Genève

<http://theory.physics.unige.ch/~durrer>

Ruth Durrer, born on January 22, 1958 in Kerns, Canton of Obwalden, Switzerland. Ruth Durrer studied theoretical physics at the University of Zurich. From 1984 until 1988, assistant at the Institute of Theoretical Physics at the University of Zurich. PhD under the supervision of Prof. Dr. Norbert Straumann. 1988/1989 Post-doc at the Institute of Astronomy of Cambridge University (UK). During the following two years 'visiting lecturer' the Physics Department at Princeton University. In spring 1992 she obtained the Schl afli Award of the Swiss Academy of Sciences for her paper on 'Gauge Invariant Cosmological Perturbation Theory'. From 1993 to 1995 she was the secretary of the Swiss Physical Society. In summer 1994, visiting lecturer at the Newton Institute in Cambridge (UK). Since fall 1995 she is professor at the University of Geneva. Research visits at the Universities of Berkeley, California and the Institute for Advanced Study in Princeton. She has published many research papers and several reviews in cosmology. Ruth Durrer is married to the painter and visual artist Martin Zimmermann and she is the mother of three children. She is currently living with her family in Geneva.

PROF. DR. DAVID RITZ FINKELSTEIN

Physik / Physics

Georgia Institute of Technology

School of Physics, Atlanta/USA

www.physics.gatech.edu/people/faculty/dfinkelstein.html

David Ritz Finkelstein is a physicist at Georgia Tech in Atlanta, where he teaches, does research, and edits the *International Journal of Theoretical Physics*. He did early work on quantum logic, black holes, gravitational skyrmions, and the electroweak unification. He thinks the universe is a kind of quantum cellular computer or neural network, and for the last forty years has been chasing the chronon, the elementary process in the cosmic network and thus the atom of matter-space-time. As a language for the cosmic computer he developed an algebraic higher-order quantum logic. He also works on artificial quantum computers. His book, *Quantum Relativity*, described this work up to 1996. He also works on quantum computation. On occasions he has taught at the Atlanta College of Art, written for the *Kenyon Review*, *Art Papers*, and *Musicworks Magazine*, and written on the philosophy of physics; but mostly he publishes in journals like the *Journal of Mathematical Physics*.

PROF. DR. BASIL J. HILEY

Theoretische Physik

Theoretical Physics

Birkbeck College

University of London

www.bbk.ac.uk/tpru/

Basil Hiley is Emeritus Professor of Physics in the Theoretical Physics Research Unit at Birkbeck, University of London. His main interests are in the foundations of quantum theory and relativity and had a very long and fruitful collaboration with David Bohm. At present he is investigating a process-based theory of pre-space with a specific aim of developing a quantized form of general relativity. This has led him to a detailed investigation of the use algebraic techniques in quantum theory rather than the traditional Hilbert space formalism. He also has interests in exploring the possibility of finding a theory of the relationship between mind and matter and has delivered plenary lectures to famous Tucson Consciousness conferences. He has written over one hundred research papers on fundamental questions in quantum mechanics and on the relationship of mind and matter and has lectured in many countries round the world. With the late Professor Bohm he has co-authored *The Undivided Universe*, Routledge, London, 1993. He is also co-editor with David Peat of *Quantum Implications*, Essays in Honour of David Bohm, Routledge, London, 1987.

PROF. DR. JOSEF MITTERER

Philosophie / Philosophy

Universität Klagenfurt

www.uni-klu.ac.at/

Josef Mitterer, born in 1948, is professor of philosophy at the University of Klagenfurt, Austria. Studies in Linz, Graz and at the University of California at Berkeley. For many years

active in the tourist industry as a Tour Manager, Consultant and Copywriter. Visiting professor and lecturer at several universities. Since 1990 at the University of Klagenfurt. Mitterer reconstructs in his work philosophy as an argumentation-technique which allows to immunize any arbitrary opinions being held and to criticize any counteropinions. Publications include: *Die Flucht aus der Beliebigkeit (The Flight from Arbitrariness)* S. Fischer, 2nd ed. Frankfurt, 2001. *Das Jenseits der Philosophie (The Beyond of Philosophy)* Passagen, 3rd ed. Vienna, 2000.

PROF. DR. OTTO E. RÖSSLER

Chaostheorie / Theory of Chaos

Universität Tübingen

www.heise.de/tp/deutsch/inhalt/co/5004/1.html

Otto E. Rössler (D) born an Austrian in Berlin, finished his medical studies with an immunological dissertation in Tübingen in 1966. Three years later he won a competitive visiting appointment offered by the Center for Theoretical Biology of the State University of New York at Buffalo. In 1975, Art Winfree initiated him into chaos. A tenured faculty position in theoretical biochemistry at the University of Tübingen came in 1976, after he had published his paper on the "simplest" chaotic attractor (as Ed Lorenz later put it). Three years later, hyperchaos followed, which was equally simple. A member of the Santa Fe Institute and a fellow of the International Institute for Advanced Studies in Systems Research and Cybernetics, the author has published about 250 scientific papers in various fields - including biogenesis (1971), dynamical automata (1972), artificial life (with an equation for a brain in 1974), artificial persons (1996) and quasar theory (current). Descartes' Dream, a CD with key statements of Otto Rössler about themes such as 'Evolution without Consciousness', 'The Now' and 'The World as Interface' was published in 2002 (ISBN 3-932513-28-2).

PROF. DR. BENNY SHANON

Psychologie / Psychology

The Hebrew University, Jerusalem

<http://unixware.mscc.huji.ac.il/~oori/shanon.htm>

Benny Shanon is a professor and ex-chairperson of the Department of Psychology at the Hebrew University of Jerusalem (Israel). He studied linguistics, philosophy and psychology and holds a doctorate in experimental cognitive psychology from Stanford University. Has also taught at M.I.T., Cornell University and Swarthmore College. His research interests include the semantics and pragmatics of natural language, thought processes and creativity, the phenomenology of human consciousness, the conceptual foundations of cognitive science, and the philosophy of psychology. His book *The Representational and Presentational* (Harvester-Wheatsheaf & Prentice-Hall, 1993) presents a comprehensive critique of the representational-computational view of mind and offers alternative conceptual foundations for the study of mind. His recently published *The Antipodes of the Mind* (Oxford University

Press, 2002) is a pioneering cognitive-psychological study examining the phenomenology of the special state of mind induced by the psychotropic Amazonian brew Ayahuasca. He is now working on the development of a general theory of human consciousness, one encompassing both ordinary and non-ordinary states of mind.

MICHAEL SNOW

Künstler / Artist

Toronto

<http://schwinger.harvard.edu/~terning/bios/Snow.html>

Michael Snow is an artist who has worked in many mediums: drawing, painting, sculpture, film, photo-work, holographic work, music, book work, video and sound installation. His visual artworks are in many collections world wide and have been exhibited world wide. He has had many one-man exhibitions: at the National Gallery of Canada in Ottawa, The Hara Museum in Tokyo, The Museum of Modern Art in New York and most recently (Nov-Dec, 2002) at the Centre Pompidou in Paris. His films have been shown world-wide as well, at many festivals (eg. London, New York, Rotterdam, Berlin) and are in the collections of those film archives which collect film as art (eg. Österreichisches Filmmuseum in Vienna). He has been a professional musician since the 1950's, starting as a jazz pianist. For about 30 years he has been very involved with free improvisation, playing hundreds of concerts in Canada, USA, Europe, Japan, usually with the Toronto group CCMC which has released many recordings. Several recordings have been released under Snow's name, some of which, rather than "improvisations", are "compositions" which use, for example the creative possibilities of multi-track studio recordings. His most recent film "**Corpus Callosum*" (2001) uses digital means. An inter-active DVD-Rom "Anarchive 2-Digital Snow", the making of which was directed by Snow and which is an encyclopedia of his work in all mediums, has just been released. Snow considers his work as "sensuous philosophy".

PROF. DR. HENRY P. STAPP

Physik / Physics

Lawrence Berkeley Laboratory

University of California, Berkeley

<http://www-physics.lbl.gov/~stapp/stappfiles.html>

Henry Stapp is a theoretical physicist at the University of California's Lawrence Berkeley National Laboratory. He was the chief theorist on the team led by Nobel laureates Emilio Segre and Owen Chamberlain in the analysis of the proton-proton spin-correlation data. He developed the theoretical machinery for the analysis of that data, and carried out the subsequent phase shift search. As a result of that work with spin correlations he was one of the first physicists to recognize the importance of a John Bell's work on quantum nonlocality, and has extended Bell's nonlocality result significantly by removing the hidden variable

assumption. During the sixties he was a leader in developing the analytic S-matrix approach to quantum theory, and derived the basic analyticity properties of the S-matrix, and the connection between spin and statistics, from spacetime properties of the S-matrix. That work led to questions about the connection between the mathematical formulas of quantum theory and human experience, and, after extensive discussions with Heisenberg, he published in 1972 a seminal paper *The Copenhagen Interpretation*. This led him to a more intensive study of the mind-brain connection, and to the 1993 publication of his first book *Mind, Matter and Quantum Mechanics*. His second book *The Mindful Universe* will be published in 2003.

DR. ROGER G. UCHTMANN

Kommunikationswissenschaften und Anthropologie

Sciences of Communication and Anthropology

Centro Interdisciplinar de Semiótica da Cultura e da Midia (CISC)

Pontifícia Universidade Católica de São Paulo

<http://homepages.compuserve.de/roguman/>

Roger Uchtmann was born in Bremen in 1958. Dr. Roger Uchtmann is visiting professor of Communications and Anthropology at the Universities PUC/SP and UNISANTOS in São Paulo, a member of the scientific committee of CISC (Interdisciplinary Centre for Semiotics of Culture and Media) and "Revista Ghehr". His various publications especially treat the semiotics of evolution, the emergence and genesis of culture, cultural codification, mythology and recent mythogenesis. He is German translator of a new publication of Charles Sanders Peirce's *How to make our Ideas clear* and of Jack Sarfatti's *Destiny Matrix*. In his basic work *Von Reiseform und Differenzprinzip, von Tausch und Simulation - Die elementaren Semiosen und Semiosphären des Kulturprozesses*, Roger Uchtmann examines the possibilities of special and general evolution in the tradition of natural philosophy. He explains self-consciousness as a product of the emergence of culture and a "second reality", possibly influencing even subatomic structures.

PROF. DR. MATT VISSER

Mathematik / Mathematics

School of Mathematical and Computing Sciences

Victoria University of Wellington

New Zealand

<http://www.mcs.vuw.ac.nz/~visser>

Matt Visser is a mathematical physicist based at the School of Mathematical and Computing Sciences in the Victoria University of Wellington, New Zealand. Over the last decade his interests have included the study of spacetime wormholes and related peculiarities in general relativity. Visser's book *Lorentzian Wormholes: From Einstein to Hawking* remains the only technical scientific book exploring the possibilities of wormhole physics and Stephen Hawking's "chronology protection conjecture". Visser's other research interests include black holes, curved-spacetime quantum field theory, and cosmology. A defining theme for much of this work is investigation of the manner in which quantum physics influences the energy conditions of classical general relativity. Visser has published 90 scientific articles and two books mainly focussing on the interplay between classical general relativity and quantum physics. His most recent book *Artificial Black Holes* (edited with Mario Novello and Grigori Volovik) is a collection of scientific articles on the possibility of simulating black hole physics in the laboratory.

DR. ALAN WALLACE

Philosophie und Physik

Philosophy and Physics

Mind and Life Institute, Boulder/USA

www.mindandlife.org/

Alan Wallace trained for many years as a monk in Buddhist monasteries in India and Switzerland and he has taught Buddhist theory and practice in Europe and America since 1976. He has served as interpreter for numerous Tibetan scholars and contemplatives, including H. H. the Dalai Lama. After graduating *summa cum laude* from Amherst College, where he studied physics and the philosophy of science, he earned his M.A. and Ph.D. in religious studies at Stanford University. He has taught at Amherst College, Stanford University, UCLA, and the University of California, Santa Barbara. He has edited, translated, authored, and contributed to more than thirty books on Tibetan Buddhism, medicine, language, and culture, and the interface between science and religion. His published works include *Choosing Reality: A Buddhist View of Physics and the Mind* (Snow Lion, 1996), *The Bridge of Quiescence: Experiencing Buddhist Meditation* (Open Court, 1998), *The Taboo of Subjectivity: Toward a New Science of Consciousness* (Oxford, 2000), *Buddhism with an Attitude: The Tibetan Seven-Point Mind-Training* (Snow Lion, 2001), and *Buddhism and Science: Breaking New Ground* (Columbia University Press, 2003). He is presently a research scholar and contemplative associated with the Mind and Life Institute, and he is in the planning stage of establishing a university-based, interdisciplinary, cross-cultural Center for the Study of Consciousness.

Programme

**SPACE, TIME AND BEYOND
RAUM, ZEIT UND JENSEITS**

**5th Biennial International Symposium
of Science, Technics + Aesthetics**

**5. Biennales Internationales Symposion
zu Wissenschaft, Technik + Ästhetik**

**lucernetheatre January 18 - 19, 2003
luzernertheater 18. / 19. Januar 2003**

All lectures and panel discussions will be translated simultaneously from English into German or German into English

Alle Referate und Gespräche werden simultan von Englisch auf Deutsch bzw. Deutsch auf Englisch übersetzt

Saturday, January 18, 2003

Samstag, 18. Januar 2003

lucernetheatre / luzernertheater

13.00 - 13.15 PM Welcome Address / Presentation of the Programme

**Dr. Paul Huber, Minister of the Department of Justice, -Community and -Culture,
Canton of Lucerne / Vorsteher des Justiz-, Gemeinde- und Kulturdepartementes des
Kantons Luzern**

Barbara Mundel, Director lucernetheatre / Direktorin luzernertheater

**René Stettler, Artistic Director, New Gallery of Lucerne / Künstlerischer Leiter, Neue
Galerie Luzern**

13.15 - 13.45 PM DAVID FINKELSTEIN Physics Atlanta / USA

**SPACE-TIME AND QUANTUM THEORY
RAUMZEIT UND QUANTENTHEORIE**

13.45 - 14.15 PM Discussion - chaired by OTTO RÖSSLER Chaos Theory Tübingen

14.15 - 14.30 PM Break

14.30 - 15.00 PM GREGORY BENFORD Plasma Physics and Astrophysics Irvine / USA

**TIME AND TIMESCAPE
ZEIT UND ZEITSCHAFT**

15.00 - 15.30 PM Discussion - chaired by RUTH DURRER Theoretical Physics Genf

15.30 - 15.45 PM Break

Presentation

15.45 - 16.30 PM MICHAEL SNOW Painter, Sculptor, Filmer and Videomaker, Photographer, Writer and Musician Toronto

**TIME AND SPACE AS REPRESENTATION
ZEIT UND RAUM ALS REPRÄSENTATION**

16.30 - 17.00 PM MATT VISSER Mathematics Wellington / New Zealand

**DO THE LAWS OF PHYSICS PERMIT WORMHOLES FOR INTERSTELLAR TRAVEL OR MACHINES FOR TIME TRAVEL?
ERLAUBEN DIE GESETZE DER PHYSIK WURMLÖCHER FÜR INTERSTELLARE REISEN ODER FÜR ZEITREISEN?**

17.00 - 17.30 PM Discussion - chaired by DAVID FINKELSTEIN Physics Atlanta / USA

17.30 - 17.45 PM Break

17.45 - 18.15 PM BASIL HILEY Physics London

**RELATIVITY, QUANTUM GRAVITY AND SPACE-TIME STRUCTURES
RELATIVITÄT, QUANTENGRAVITATION UND STRUKTUREN DER RAUMZEIT**

18.15 - 18.45 PM Discussion - chaired by HENRY STAPP Physics Berkeley / USA

18.45 - 19.00 PM Break

approx. 19.00 - approx. 20.00 PM Final Panel Discussion 1st Day with / chaired by JOSEF MITTERER Philosophy Klagenfurt

Sunday, January 19, 2003

Sonntag, 19. Januar 2003

lucernetheatre / luzernertheater

13.00 - 13.15 PM Presentation of the Programme

René Stettler, Artistic Director, New Gallery of Lucerne

13.15 - 13.45 PM HENRY STAPP Physics Berkeley / USA

**QUANTUM THEORY OF THE HUMAN PERSON
QUANTENTHEORIE DER MENSCHLICHEN PERSON**

**13.45 - 14.15 PM Discussion - chaired by ALAN WALLACE Philosophy and Physics
Santa Barbara / USA**

14.15 - 14.30 PM Break

14.30 - 15.00 PM ALAN WALLACE Philosophy and Physics Santa Barbara / USA

**VACUUM STATES OF CONSCIOUSNESS: A TIBETAN BUDDHIST VIEW
VAKUUM-ZUSTÄNDE DES BEWUSSTSEINS: ANSICHTEN IM TIBETISCHEN
BUDDHISMUS**

15.00 - 15.30 PM Discussion - chaired by BENNY SHANON Psychology Jerusalem

15.30 - 15.45 PM Break

Presentation

15.45 - 16.30 PM CHAR DAVIES Media- and Art Theory Montreal

**LANDSCAPE, EARTH, BODY, BEING, SPACE AND TIME IN THE IMMERSIVE
VIRTUAL ENVIRONMENTS 'OSMOSE' AND 'EPHEMERE'
LANDSCHAFT, ERDE, KÖRPER, SEIN, RAUM UND ZEIT IN DEN IMMERSIVEN
VIRTUELLEN UMGEBUNGEN 'OSMOSE' UND 'EPHEMERE'**

16.30 - 17.00 PM PETER BEAMISH Whale Research Trinity/NF / Canada

**THE DUALITY OF "TIME"
DIE DUALITÄT VON "ZEIT"**

17.00 - 17.30 PM Discussion - chaired by OTTO RÖSSLER Chaos Theory Tübingen

17.30 - 17.45 PM Break

17.45 - 18.15 PM BENNY SHANON Psychology Jerusalem

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ALTERED TEMPORALITY - REFLECTIONS BASED ON THE AYAHUASCA EXPERIENCE
VERÄNDERTE TEMPORALITÄT - ÜBERLEGUNGEN ZUR AYAHUASCA-ERFAHRUNG

18.15 - 18.45 PM Discussion - chaired by ROGER UCHTMANN Sciences of Communication / Anthropology Bremen / São Paulo

18.45 - 19.00 PM Break

approx. 19.00 - approx. 20.00 PM Final Panel Discussion 2nd Day with / chaired by ALAN WALLACE Philosophy und Physics Santa Barbara / USA