



Universität Bielefeld

ZiF

Zentrum für
interdisziplinäre Forschung

**The direction of time.
The role of reversibility/irreversibility in the study of nature**

January 14 - 18, 2002

Organizing committee:

*Sergio Albeverio (Bonn), Philippe Blanchard (Bielefeld),
Michael Drieschner (Bochum), Sylvie Paycha (Aubiere)*

Program

Monday, January 14th

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| 14.00 | | Address of welcome by the ZiF directorate
and by the Prorektor for research Katharina Kohse-Höinghaus |
| 14.30 | Holger Lyre | Time and temporality in philosophy of science - an overview |
| 15.30 | | Coffee break |
| 16.00 | Klaus Mainzer | The direction of time in dynamical systems. Interdisciplinary
perspectives from cosmology to brain research |
| 17.00 | Andreas Dress | (Ir)reversibility of molecular evolution |

Tuesday, January 15th

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| 9.30 | Julian Barbour | A timeless explanation of time asymmetry through
configuration-space asymmetry |
| 10.30 | | Coffee break |
| 11.00 | Luciano Boi | Some reflections on symmetry and symmetry breaking,
and the dynamical action of time |
| 12.00 | Detlef Dürr | The nature of equilibrium |
| 13.00 | | Lunch break |
| 14.30 | Francesco Guerra | Time reversal for stochastic processes |

15.30	Marc Lachièze-Rey	Where is time in space time
16.30		Coffee break
17.00	Jean Claude Zambrini	Boundary conditions, time reversal and measurement
18.30		Dinner at ZiF

Wednesday, January 16th

9.30	David Albert	On the origins of the statistical-mechanical probabilities
10.30		Coffee break
11.00	Anindita Balslev	Cyclicity and linearity: Caution against abuse of time-metaphors
12.00	Vieri Benci	The role of information theory in the direction of time
13.00		Lunch break
14.30	Marcello Cini	Irreversibility: Appearance or reality?
15.30	Klaus Kiefer	Can quantum gravity explain the arrow of time
16.30		Coffee break
17.00		Round table

Thursday, January 17th

9.30	Metod Saniga	Geometry of psychological time
10.30		Coffee break
11.00	Roland Omnes	The common time direction of logic, decoherence and dissipation in the logical interpretation of quantum mechanics
12.00	Lawrence S. Schulman	Cryptic arrow, opposite arrows and coarse grains
13.00		Lunch break
14.30	Roderich Tumulka	Opposite arrows of time in nonlocal particle Dynamics

15.30	Thomas Görnitz	On the different aspects of time in the fundamental theories of physics
16.30		Coffee break
17.00	Rudolf Haag	Quantum events and irreversibility
18.30		Reception by the Rektor of Bielefeld University, Dieter Timmermann

Friday, January 18th

9.30	Alessandro Teta	The Mechanism of decoherence in a two-particle model
10.30		Coffee break
11.00	Hervé Barreau	The direction of time as ascertained by cosmology
12.00	Michael Drieschner	Is time directed? - Remarks on past and future
13.00		Lunch break
14.30	Luigi Accardi	t.b.a.
15.30		Coffee break
16.00		Round table

45 min. talk - 15 min. discussion