

Conference Report

International Symposium on Entropy at the Max-Planck-Institut für Physik komplexer Systeme (Dresden, Germany), June 25 - 28, 2000

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The International Symposium on Entropy was held at the Max-Planck-Institut für Physik komplexer Systeme (Dresden, Germany, <http://www.mpipks-dresden.mpg.de/>) on June 25-28, 2000. The symposium received very generous financial support from DFG (<http://www.dfg.de/english/index.html>) and EURANDOM (the european stochastics institute at Eindhoven, <http://www.eurandom.nl/>). The organizers were A. Greven (University of Erlangen-Nürnberg), G. Keller (University of Erlangen-Nürnberg) and G. Warnecke (Uni-Magdeburg.de, University of Magdeburg). There were 14 invited speakers. As the organizers have informed me that the lectures will be published as a proceedings book, only the lecture topics and the speaker names are listed here:

Surveys	H.O. Georgii, H. Wagner
Foundations of Physics	J. Uffink
Probability Theory	F. den Hollander, S.R.S. Varadhan
Ergodic Theory	M. Keane, L.-S. Young
Statistical Physics	Ch. Maes, E. Olivieri
Classical Thermodynamics	J. Yngvason
Continuum Mechanics	C. Dafermos
Rational Mechanics	I. Müller
Quantum Entropy	F. Benatti
Statistics / Information Theory	J. Rissanen

I unfortunately missed all the lectures on Monday because I did not expect that traveling to Dresden by train from Basel would take more than 8 hours, and I spent all day on Monday on the train. Therefore, I will have to await a copy of the proceedings book to know what went on that day!

The building of the Max-Planck-Institut für Physik komplexer Systeme, Dresden, where the conference was held, is not symmetric at all and it is therefore very beautiful in my opinion [1]. As an experimental chemist, I understand that symmetry is very closely related to entropy concept [1]. For example, in the fascinating lecture by Professor I. Müller given on the morning of Tuesday, June 27, a video was played where the seven hard sphere particles seek a symmetric assemblage as the most stable final structure (Professor I. Müller is well known because of his studies of extended thermodynamics). However, as can be expected, no speaker mentioned the concept symmetry at this entropy symposium.

Fabio Benatti (e-mail fabio.benatti@trieste.infn.it) gave a very good survey of quantum entropies. He clarified the concepts of quantum bits and other concepts in classical information theory (Shannon) and quantum information theory (von Neumann). I have asked Professor Benatti to contribute a review paper to our journal Entropy.

I hope the proceedings book can be published soon so that a larger number of readers can enjoy these very good lectures. A poster session was on Tuesday evening. The very active and energetic lady Dr. Katalin Martinas (e-mail martinas@ludens.elte.hu), who gave a poster presentation at the conference, expressed her interest in organizing another International Symposium on Entropy in Budapest in 2002.

One speaker commented that "the 20th century was lost for thermodynamics". He also commented that there are two Nobel prize winners (Onsager and Prigogine) regarding entropy concepts in the 20th century. "Onsager deserves the prize", the speaker said. A handout entitled "Aspects of Entropy" distributed at the symposium listed all kinds of entropy. This uncertainty on the concept of entropy itself is a kind of entropy and the uncertainty should be reduced. There is a lot of hard work to do regarding entropy in the 21st century.

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References and Notes

1. Symmetry is in principle ugly because entropy and symmetry have a logarithmic relation. I have given talks entitled "ugly symmetry" at many universities and international conferences.