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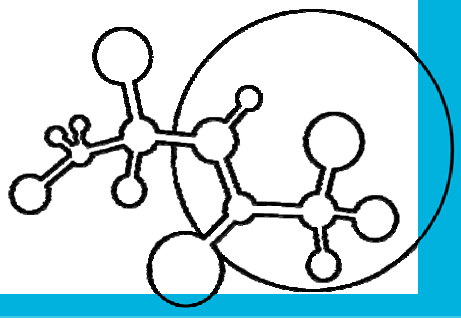

Quantum Efficiency Seminar and Colloquium

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Conformal quantum field theory: From physics to geometry

In 1984, A.A. Belavin, A.M. Polyakov and A.B. Zamolodchikov published a seminal paper titled "Infinite conformal symmetry in two-dimensional quantum field theory". This work bridges between a physical description of a class of second order phase transitions and a mathematical approach to axiomatize the corresponding quantum field theories. The publication can be viewed as one of the founding stones of a systematic study of conformal quantum field theories, which is continuing to the very day.
The talk will give an overview of the development of this active area of research, connecting its origins in scaling theory for second-order phase transitions to recent developments in mathematical physics. In particular, we will address methods which by a generalization of semi-classical limits allow a reversal of quantization, extracting geometric information from conformal field theories. Mathematicians expect that techniques developed in optimal transport theory offer the appropriate mathematical tools.

Date: **Tuesday, June 28th, 2011 4:15 pm**
Location: **FRIAS Seminar Room, Albertstr. 19, Freiburg**

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