



“Roadmap towards Ultimately-Efficient Zeta-Scale Datacenters”

Dr. Bruno Michel

IBM Research Labor – Rüschlikon, Switzerland

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04:40 pm – 06:10 pm

HSZ, Room 403

(Hörsaalzentrum, Bergstrasse 64)

Abstract: Chip microscale liquid-cooling reduces thermal resistance and improves datacenter efficiency with higher coolant temperatures by eliminating chillers and allowing thermal energy re-use in cold climates. Liquid cooling enables an unprecedented density in future computers to a level similar to a human brain. This is mediated by a dense 3D architecture for interconnects, fluid cooling, and power delivery of energetic chemical compounds transported in the same fluid. Vertical integration improves memory proximity and electrochemical power delivery creating valuable space for communication. This strongly improves large system efficiency thereby allowing computers to grow beyond exascale.

Bruno Michel received a Ph.D. in biophysics from the University of Zurich and subsequently joined IBM Research to work on scanning probe microscopy and later on the development of accurate large-area soft lithography. Dr. Michel started the Advanced Thermal Packaging group to improve thermal interfaces and miniaturized convective cooling for processors and concentrated photovoltaic systems. Main current research topics are datacenter energy re-use for future green IT and 3D packaging with interlayer cooling and electrochemical chip power supply.



We are looking forward to welcoming you to this lecture and an inspiring discussion. This Guest Lecture has been organized in collaboration with IBM and the CRC 912 – HAEC “Highly Adaptive Energy-Efficient Computing”.