Dr Sverrir Olafsson

current research

- connectivity and capacity in ad-hoc networks
- risk management - decisions under uncertainty
- end-to-end control in data networks

selected publications

- *Global optimisation of video quality by improved rate control on IP-networks* local copy
- *Modelling capacity and local connectivity in ad hoc networks* local copy
- *Making decisions under uncertainty - implications for high-technology investments* BTTJ **21** 170-183 (April 2003)
- *A general model for task distribution on an open heterogeneous processor system*
- *Modelling future telecommunication systems*
- *On the stability of strategies in competitive systems*
- *Games on networks*
- *On the stability of neural networks with arbitrary weights*
- *Comparing genetic algorithms and greedy heuristics for adaptation problems*
- *Modelling http traffic generated by community of users*
- *Modelling and performance analysis of cache networks*
- *I-traffic*
- *Derivation of a power law for internet browsing*
- *WWW cache modelling toolbox*
- *Performance and stability analysis of a random access CDMA packet network in the presence of multiple access interference*
- *Dynamic behaviour of multiple access spread-spectrum*

selected presentations

- *Capacity and connectivity in data networks* 2003 Apr 10
- *Mathematics for data networks* Aston University 2003 Mar 28
- *Connectivity and capacity in ad-hoc networks* QMUL 2003 Jan 04
- *Modelling rate allocation to Internet sessions*, Liverpool University 2003 Mar 10
- *Emergence of structures in data networks*, Cambridge University, 2000 Nov 22
- *Long-range correlations in network traffic: implications for the utilisation of network resources*, International Workshop on self-similar systems, 1998 Jul 30 - Aug 07 Dubna, Russia

previous research

- long-range correlations in data networks
- performance and stability in random access systems
- modelling of cache networks and http traffic analysis
- neural networks
- game theory

in the media

- *Calculate to accumulate*
- *Using abstract maths for real-life stability*
- *Sverrir's talk on `decisions under uncertainty'*

background

Sverrir joined BT in 1989 and initially worked on the application of dynamical neural networks to speech recognition. Since 1991 he has worked with different units within the Research Department on various modelling aspects of large complex systems. This includes work on the application of game theory and evolutionary principles to the modelling of networks and services. Presently Sverrir heads the Complexity Research Group focusing on performance aspects of peer-to-peer systems, WLANs and ad-hoc networks. More recently Sverrir has worked on the application of risk management techniques to network investment scenarios, including the pricing and trading of bandwidth as commodity.

From 1976 to 1983 Sverrir was a Tutor and Research Assistant in theoretical physics at the [Institute for Theoretical Physics, University of Tübingen](#) and [Institute for Theoretical Physics, University of Karlsruhe](#), Germany.

From 1983 to 1989 he was a Lecturer and Research Fellow in mathematics at the University of London (King's College), UMIST, and the University of Southampton. In this time Sverrir worked in various fields of theoretical physics and applied mathematics.

Sverrir Olafsson received MSc degree in mathematical physics from the University of Tübingen in 1978 and a PhD in elementary particle physics from the University of Karlsruhe in 1983.

Sverrir has published more than 45 research papers in refereed journals and conferences and more than 350 papers on popular scientific matters in newspapers and magazines. He has also given numerous radio talks and has appeared on a C4 science program.

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