

Jörg Geiger

Charité - Universitätsmedizin Berlin
Institute of Neurophysiology
Charitéplatz 1 | D-10117 Berlin
Phone: +49 (0)30 450-539730
E-mail: joerg.geiger@charite.de



Curriculum vitae

since 2009 Professor (W3), Institute of Neurophysiology, Charité
2002 – 2009 Independent research group leader (C3), “Synaptic Regulation and Function”,
Max Planck Institute for Brain Research, Frankfurt, funded by Hertie Foundation
1998 – 2002 Assistant Professor (C1), Physiology, Institute of Physiology 1, University of Freiburg
1996 – 1998 Postdoctoral fellow (Advisor: Prof. P. Jonas), Department of Physiology 1,
University of Freiburg
1996 Dr. rer. nat., University of Freiburg
1995 – 1996 Predoctoral fellow (Prof. P. Jonas), Department of Physiology 1, University of Freiburg
1993 – 1995 Fellowship, Graduate School of Molecular and Cellular Neurobiology, University of
Heidelberg
1993 – 1995 Dissertation (Advisor: Prof. Dr. P. Jonas), Max Planck Institute for Medical Research
(Department of Prof. Dr. B. Sakmann)
1992 Diploma in Biology, Freie Universität Berlin
1986 – 1992 Studies in Biology, Freie Universität Berlin

Research fields

Our group is active in the field of cellular neurophysiology with the following major areas:

- Coding principles in mammalian cortical axons
- Physiology of cortical nerve terminals
- Physiology and plasticity of GABAergic interneurons
- Neurophysiology underlying neurological and psychiatric disorders such as Alzheimer’s disease, schizophrenia, and attention deficit disorders

Activities in the scientific community, honors, awards

2001 Du Bois-Reymond Award, Deutsche Physiologische Gesellschaft, for excellent work on function of presynaptic boutons

Selected publications

Alle, H, Kubota, H, Geiger, JR. Sparse but highly efficient Kv3 outpace BKCa channels in action potential repolarization at hippocampal mossy fiber boutons. *Journal of Neuroscience*. 2011; Jun1;31(22):8001-12.

Alle, H, Roth, A and Geiger, JR. Energy-efficient action potentials in hippocampal mossy fibers. *Science*. 2009; 325, 1405-8.

Madry, C, Betz, H, Geiger, JR* and Laube, B*. Supralinear potentiation of NR1/NR3A excitatory glycine receptors by Zn²⁺ and NR1 antagonist. *Proc Natl Acad Sci U S A*. 2008; 105, 12563-8. | *equal contribution

Alle, H and Geiger, JR. Analog signalling in mammalian cortical axons. *Curr Opin Neurobiol*. 2008; 18, 314-20.

Alle, H and Geiger, JR. GABAergic spill-over transmission onto hippocampal mossy fiber boutons. *J Neurosci*. 2007; 27, 942-50.

Alle, H and Geiger, JR. Combined analog and action potential coding in hippocampal mossy fibers. *Science*. 2006; 311, 1290-3.

Alle, H, Jonas, P and Geiger, JR. PTP and LTP at a hippocampal mossy fiber-interneuron synapse. *Proc Natl Acad Sci U S A*. 2001; 98, 14708-13.

Geiger, JR and Jonas, P. Dynamic control of presynaptic Ca²⁺ inflow by fast-inactivating K⁺ channels in hippocampal mossy fiber boutons. *Neuron*. 2000; 28, 927-39.

Geiger, JR, Lubke, J, Roth, A, Frotscher, M and Jonas, P. Submillisecond AMPA receptor-mediated signaling at a principal neuron-interneuron synapse. *Neuron*. 1997; 18, 1009-23.

Geiger, JR, Melcher, T, Koh, DS, Sakmann, B, Seeburg, PH, Jonas, P and Monyer, H. Relative abundance of subunit mRNAs determines gating and Ca²⁺ permeability of AMPA receptors in principal neurons and interneurons in rat CNS. *Neuron*. 1995; 15, 193-204.