Curriculum Vitae

Prof. Dr. **Christian** Fritz Andreas **Doeller**

- Managing Director, Max Planck Institute for Human Cognitive and Brain Sciences, Stephanstraße 1A, D-04103 Leipzig, Germany
- Director, Department of Psychology, Max Planck Institute for Human Cognitive and Brain Sciences, Stephanstraße 1A, D-04103 Leipzig, Germany
- Professor of Medicine (Neuroscience), Kavli Institute for Systems Neuroscience, NTNU - Norwegian University of Science and Technology, Olav Kyrres gate 9, NO-7030 Trondheim, Norway
- Honorary Professor of Psychology (Learning and Memory), Leipzig University, Germany

doeller@cbs.mpg.de | christian.doeller@ntnu.no | doellerlab.com | twitter: @doellerlab

Nationality: German; born 10 Dec 1973 in Würzburg, Germany; two children

Languages: German (native); English (excellent); Dutch (intermediate); French (basic); Latin

Biosketch

I am the Managing Director of the Max Planck Institute for Human Cognitive and Brain Sciences (MPI-CBS), Director of the Department of Psychology at MPI-CBS, Honorary Professor of Psychology (Learning and Memory) at the Institute of Psychology - Wilhelm Wundt, Leipzig University, Germany and Professor of Medicine (Neuroscience) at the Kavli Institute for Systems Neuroscience, NTNU - Norwegian University of Science and Technology in Trondheim, Norway. Before, I have been Director of The Egil and Pauline Braathen and Fred Kavli Centre for Cortical Microcircuits at the Kavli Institute (Directors May-Britt and Edvard Moser) in affiliation with St Olavs University Hospital in Trondheim, as well as Principal Investigator at the Donders Institute for Brain, Cognition and Behaviour at Radboud University, Nijmegen, the Netherlands. I have received my undergraduate training in psychology at several German Universities (Würzburg, Humboldt University Berlin and Bonn), including research and clinical visits at two Max-Planck Institutes (Munich and Leipzig) and at the Department of Epileptology at University Hospital Bonn. After finishing my PhD with Prof Axel Mecklinger in Saarbrücken, I worked for several years as a Research Fellow and a Senior Research Fellow at University College London, UK with Prof Neil Burgess at the Institute of Cognitive Neuroscience and the Institute of Neurology and in close collaboration with the Wellcome Trust Centre for Neuroimaging (FIL) and Prof John O'Keefe's electrophysiology group at the Department of Anatomy and Developmental Biology.

Academic positions

2020-	**Managing Director**, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany
2019-	**Honorary Professor of Psychology (Learning and Memory)**, Leipzig University, Germany
2018-	**Director**, Max Planck Institute for Human Cognitive and Brain Sciences, Department of Psychology, Leipzig, Germany
2016-	**Professor of Medicine (Neuroscience)**, Kavli Institute for Systems Neuroscience, NTNU - Norwegian University of Science and Technology, Trondheim, Norway

Past positions

2017-2018	**Director**, The Egil and Pauline Braathen and Fred Kavli Centre for Cortical Microcircuits, Kavli Institute for Systems Neuroscience, NTNU, Trondheim, Norway
2016-2018	**Affiliated Senior Scientist**, St. Olavs University Hospital, Trondheim, Norway
2016-2018	**Affiliated Principal Investigator**, Donders Institute for Brain, Cognition and Behaviour; Radboud University, Nijmegen, the Netherlands
2010-2016	**Principal Investigator & Associate Professor**, Donders Institute for Brain, Cognition and Behaviour; Radboud University, Nijmegen, the Netherlands
2006-2010	**Senior Research Fellow**, Institute of Cognitive Neuroscience & Institute of Neurology, University College London, UK (Supervisor: Prof N Burgess)
2004-2006	**Research Fellow**, Institute of Cognitive Neuroscience & Department of Anatomy and Developmental Biology, UCL, UK (Supervisor: Prof N Burgess)
2002-2004	**PhD Student**, Department of Psychology, Saarland University, Saarbrücken, Germany (Supervisor: Prof A Mecklinger)

Education and training

2005	**PhD** in Psychology (topic: Cognitive Neuroscience), Saarland University, Saarbrücken, Germany Supervisor: Prof A Mecklinger)
2002	**Diploma** in Psychology, University of Bonn, Germany (thesis supervisor: Prof A Mecklinger)
2000	Clinical Trainee at the Department of Epileptology, University of Bonn (Supervisor: Dr C Helmstaedter)
1999	Research Trainee at the Max-Planck Institute of Cognitive Neuroscience, Leipzig, Germany (Supervisor: Dr B Opitz & Dr A Mecklinger)
1999	Research Trainee at the Max-Planck Institute for Psychological Research, Munich, Germany (Supervisor: Dr B Hommel)
1997-2001	Student Research Assistant at the Universities of Würzburg, Bonn & Saarbrücken
1999-2005	Studies in Computer Science, University of Bonn (1999-2001, full-time) & University of Hagen (2003-2005, part-time), Germany
1996-2002	Studies in Psychology, University of Würzburg, Humboldt University Berlin & University of Bonn, Germany

Selected publications (senior and first author only)

Frey M, Nau M & Doeller CF (2021). Magnetic resonance-based eye tracking using deep neural networks. **Nature Neuroscience***, 24,* 1772-1779. doi:10.1038/s41593-021-00947-w (see preview by Krajbich I. No camera needed with MR-based eye tracking. *Nat Neurosci* (2021). https://doi.org/10.1038/s41593-021-00942-1)

Frey M, Tanni S, Perrodin C, O'Leary A, Nau M, Kelly J, Banino A, Bendor D, Lefort J, Doeller CF* & Barry C* (2021). Interpreting wide-band neural activity using convolutional neural networks. **eLife***, 10*: e66551. doi:10.7554/eLife.66551.

Julian JB & Doeller CF (2021). Remapping and realignment in the human hippocampal formation predict context-dependent spatial behavior. **Nature Neuroscience***, 24,* 863-872. doi:10.1038/s41593-021-00835-3.

Bellmund JLS, de Cothi W, Ruiter TA, Nau M, Barry C* & Doeller CF * (2020). Deforming the metric of cognitive maps distorts memory. **Nature Human Behaviour**, *4*(2), 177-188. doi:10.1038/s41562-019-0767-3.
* shared senior author

Bottini R & Doeller CF (2020). Knowledge across reference frames: Cognitive maps and image spaces. **Trends in Cognitive Sciences**. doi:10.1016/j.tics.2020.05.008.

Nau M, Navarro Schröder T, Frey M & Doeller CF (2020). Behavior-dependent directional tuning in the human visual-navigation network**. Nature Communications***, 11*(1): 3247. doi:10.1038/s41467-020-17000-2.

Theves S, Fernandez G & Doeller CF (2019). The hippocampus encodes distances in multidimensional feature space. **Current Biology***, 29*(7), 1226-1231.e3. doi:10.1016/j.cub.2019.02.035.

Bellmund JLS, Gärdenfors P, Moser EI & Doeller CF (2018). Navigating cognition: Spatial codes for human thinking. **Science***, 362*(6415): eaat6766. doi:10.1126/science.aat6766.

Grøntvedt GR, Navarro Schröder T, Sando SB, White L, Bråthen G & Doeller CF (2018). Alzheimer's disease. **Current Biology***, 28*(11), R645-R649. doi:10.1016/j.cub.2018.04.080.

Nau M, Julian JB & Doeller CF (2018). How the brain's navigation system shapes our visual experience. **Trends in Cognitive Sciences***, 22*(9), 810-825. doi:10.1016/j.tics.2018.06.008.

Nau M, Navarro Schröder T, Bellmund JLS & Doeller CF (2018). Hexadirectional coding of visual space in human entorhinal cortex. **Nature Neuroscience***, 21*(2), 188-190. doi:10.1038/s41593-017-0050-8.

Staudigl T, Leszczynski M, Jacobs J, Sheth SA, Schroeder CE, Jensen O & Doeller CF (2018). Hexadirectional modulation of high-frequency electrophysiological activity in the human anterior medial temporal lobe maps visual space. **Current Biology***, 28*(20), 3325-3329.e1–e4. doi:10.1016/j.cub.2018.09.035.

Kaplan R, Schuck NW & Doeller CF (2017). The role of mental maps in decision-making. **Trends in Neurosciences***, 40*(5), 256-259. doi:10.1016/j.tins.2017.03.002.

Backus AR, Bosch SE, Ekman M, Grabovetsky AV & Doeller CF (2016). Mnemonic convergence in the human hippocampus. **Nature Communications***, 7*: 11991. doi:10.1038/ncomms11991.

Backus AR, Schoffelen J-M, Szebényi S, Hanslmayr S & Doeller CF (2016). Hippocampal-prefrontal theta oscillations support memory integration. **Current Biology***, 26*(4), 450-457. doi:10.1016/j.cub.2015.12.048.

Steemers B, Vicente-Grabovetsky A, Barry C, Smulders P, Navarro Schröder T, Burgess N & Doeller CF (2016). Hippocampal attractor dynamics predict memory-based decision making. **Current Biology***, 26*(13), 1750-1757. doi:10.1016/j.cub.2016.04.063.

Collin SHP, Milivojevic B & Doeller CF (2015). Memory hierarchies map onto the hippocampal long axis in humans. **Nature Neuroscience***, 18*(11), 1562-1564. doi:10.1038/nn.4138.

Kunz L, Navarro Schröder T, Lee H, Montag C, Lachmann B, Sariyska R, Reuter M, Stirnberg R, Stöcker T, Messing-Floeter PC, Fell J, Doeller CF* & Axmacher N* (2015). Reduced grid-cell–like representations in adults at genetic risk for Alzheimer's disease. **Science***, 350*(6259), 430-433. doi:10.1126/science.aac8128. * shared senior author

Milivojevic B, Vicente-Grabovetsky A & Doeller CF (2015). Insight reconfigures hippocampal-prefrontal memories. **Current Biology***, 25*(7), 821-830. doi:10.1016/j.cub.2015.01.033.

Doeller CF, Barry C & Burgess N (2010). Evidence for grid cells in a human memory network. **Nature**, 463, 657-661. Commentaries on the paper in Cell (140, Feb 2010), *Nature Neuroscience Reviews* (11, Mar 2010) and *F1000*.

Doeller CF & Burgess N (2008). Distinct error-correcting and incidental learning of location relative to landmarks and boundaries. **PNAS***, 105*(15), 5909-5914. doi:10.1073/pnas.0711433105.

Doeller CF, King JA & Burgess N (2008). Parallel striatal and hippocampal systems for landmarks and boundaries in spatial memory. **PNAS***, 105*(15), 5915-5920. doi:10.1073/pnas.0801489105.

Selected publications under review:

Garvert MM, Saanum T, Schulz E, Schuck N & Doeller CF (in revision). Hippocampal spatio-temporal cognitive maps adaptively guide reward generalization. **Nature Neuroscience**.

Bellmund JLS, Deuker L, Montijn ND & Doeller CF (in revision). Structuring time: the hippocampus constructs sequence memories that generalize temporal relations across experiences. **Nature Communications**.

Navarro Schröder T, Towse BW, Nau M, Burgess N, Barry C & Doeller CF (in revision). Environmental anchoring of grid-like representations minimizes spatial uncertainty during navigation. **Nature Communications**.