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Authors: Tatiana Korotkova, Alexey Ponomarenko, Caitlin K. Monaghan, Steven L. Poulter, Francesca Cacucci, Tom Wills, Michael E. Hasselmo, Colin Lever



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Reconciling the different faces of hippocampal theta: the role of theta oscillations in cognitive, emotional and innate behaviors

Tatiana Korotkova^{1,2,§}, Alexey Ponomarenko¹, Caitlin K. Monaghan³, Steven L. Poulter⁴, Francesca Cacucci⁵, Tom Wills⁶, Michael E. Hasselmo³, Colin Lever^{4,§}.

¹Behavioural Neurodynamics Group, Leibniz Institute for Molecular Pharmacology (FMP)/ NeuroCure Cluster of Excellence, Chariteplatz 1, CCO, 10117 Berlin, Germany;

²Neuronal Circuits and Behavior Research Group, Max Planck Institute for Metabolism Research, Gleueler Str. 50, 50931 Cologne, Germany

³Center for Systems Neuroscience, Department of Psychological and Brain Sciences and Graduate Program for Neuroscience, Boston University, 2 Cummington Mall, Boston, Massachusetts, 02215 USA

⁴Department of Psychology, University of Durham, DH1 3LE, U.K.

⁵Department of Neuroscience, ⁶Department of Cell and Developmental Biology, Physiology and Pharmacology, University College London, London, WC1E 6BT, UK.

[§]Corresponding authors; tatiana.korotkova@sf.mpg.de, Colin.Lever@durham.ac.uk

Highlights

- Theta rhythm is crucial for cognitive functions: memory, spatial and time coding
- Theta rhythm is crucial for anxiety-related behaviours
- Theta oscillation properties (phase, frequency, amplitude) are linked with behaviors
- Parallel emergence of hippocampal theta oscillations and behaviors during development

Abstract

The theta oscillation (5-10 Hz) is a prominent behavior-specific brain rhythm. This review summarizes studies showing the multifaceted role of theta rhythm in cognitive functions, including spatial coding, time coding and memory, exploratory locomotion

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