

LOCATION

Max-Planck-Zentrum für Physik und Medizin (MPZPM)

Seminar room 0.125
Kussmaulallee 2, 91054 Erlangen



Source: <https://mpzpm.mpg.de/about>



- 1 Max-Planck-Zentrum für Physik und Medizin
- 2 Parking garage ›Uni-Kliniken



Please register online at
<https://go.fau.de/1bdde>
by **January 17, 2025**, at the latest.

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Collaborative Research Center
CRC 1540

Exploring Brain Mechanics

2nd EBM Update Meeting

January 31, 2025

Max-Planck-Zentrum für Physik und Medizin
(MPZPM),
Seminar room 0.125
Kussmaulallee 2, 91054 Erlangen



PROGRAM

09:30 – 10:30 EBM Executive Meeting

10:30 – 12:30 EBM Members' General Assembly

ESTABLISHING MAGNETIC RESONANCE ELASTOGRAPHY AT FAU

12:30 – 12:40 Progress update on project Y (F. Laun)

12:40 – 14:00 LUNCH BREAK

CROSS-SECTIONAL RESEARCH AREA X: CROSS-SECTIONAL PROJECTS

14:00 – 14:30 Progress update on projects X01 – X03 (K. Breininger)

FOCAL RESEARCH AREA A: CEREBRAL MECHANICS

14:30 – 15:00 Progress update on projects A01 – A05 (S. Falk)

15:00 – 15:30 COFFEE BREAK + POSTER EXHIBITION

FOCAL RESEARCH AREA B: SPINAL MECHANICS

15:30 – 16:00 Progress update on projects B01 – B05 (K. Franze)

FOCAL RESEARCH AREA C: CELLULAR MECHANICS

16:00 – 16:30 Progress update on projects C01 – C05 (K. Kobow)

from 16:30 CLOSING NETWORKING RECEPTION

PROJECTS

FOCAL RESEARCH AREA A: CEREBRAL MECHANICS

- A01 *In silico modelling of brain malformations*
S. Budday
- A02 *Quantitative characterisation of brain malformations*
I. Blümcke, A. Dörfler, F. Paulsen
- A03 *In vitro model for the mechanics of early brain development*
A. Schambony
- A04 *The role of mechanics in orchestrating neural lineage decisions*
M. Karow / S. Falk
- A05 *In vivo model for the mechanics of brain development*
K. Franze

FOCAL RESEARCH AREA B: SPINAL MECHANICS

- B01 *In silico modelling of spinal cord regeneration*
P. Steinmann, S. Budday
- B02 *Pre and post metamorphosis spinal cord regeneration in frogs*
K. Franze
- B03 *The determinants of spinal cord mechanics in homeostasis*
J. Guck / S. Möllmert
- B04 *Spinal cord mechanics in a mouse model of multiple sclerosis*
S. Kürten
- B05 *In vivo mechanical manipulation of spinal cord regeneration*
D. Wehner

PROJECTS

FOCAL RESEARCH AREA C: CELLULAR MECHANICS

- C01 *In silico modelling of mechanical cell-matrix interactions*
V. Zaburdaev, P. Steinmann
- C02 *The role of mechanics for neuronal 'plasticity'*
R. Frischknecht
- C03 *The role of mechanics in synchronised neuronal activity*
K. Kobow
- C04 *Cellular differentiation in brain tissue-like matrices*
A. Bosserhoff
- C05 *Molecular mechanisms of neuronal mechanotransduction*
B. Fabry

CROSS-SECTIONAL RESEARCH AREA X: CROSS-SECTIONAL PROJECTS

- X01 *Model-based reconciliation of ex vivo and in vivo test data*
J. Guo / I. Sack, P. Steinmann, K. Willner
- X02 *Data analysis and machine learning for heterogeneous, cross-species data*
A. Maier / K. Breininger
- X03 *Engineering brain tissue-like matrices*
A.R. Boccaccini

ADDITIONAL PROJECT:

- Y *Establishing magnetic resonance elastography at FAU*
A. Dörfler / F. Laun, J. Guo / I. Sack