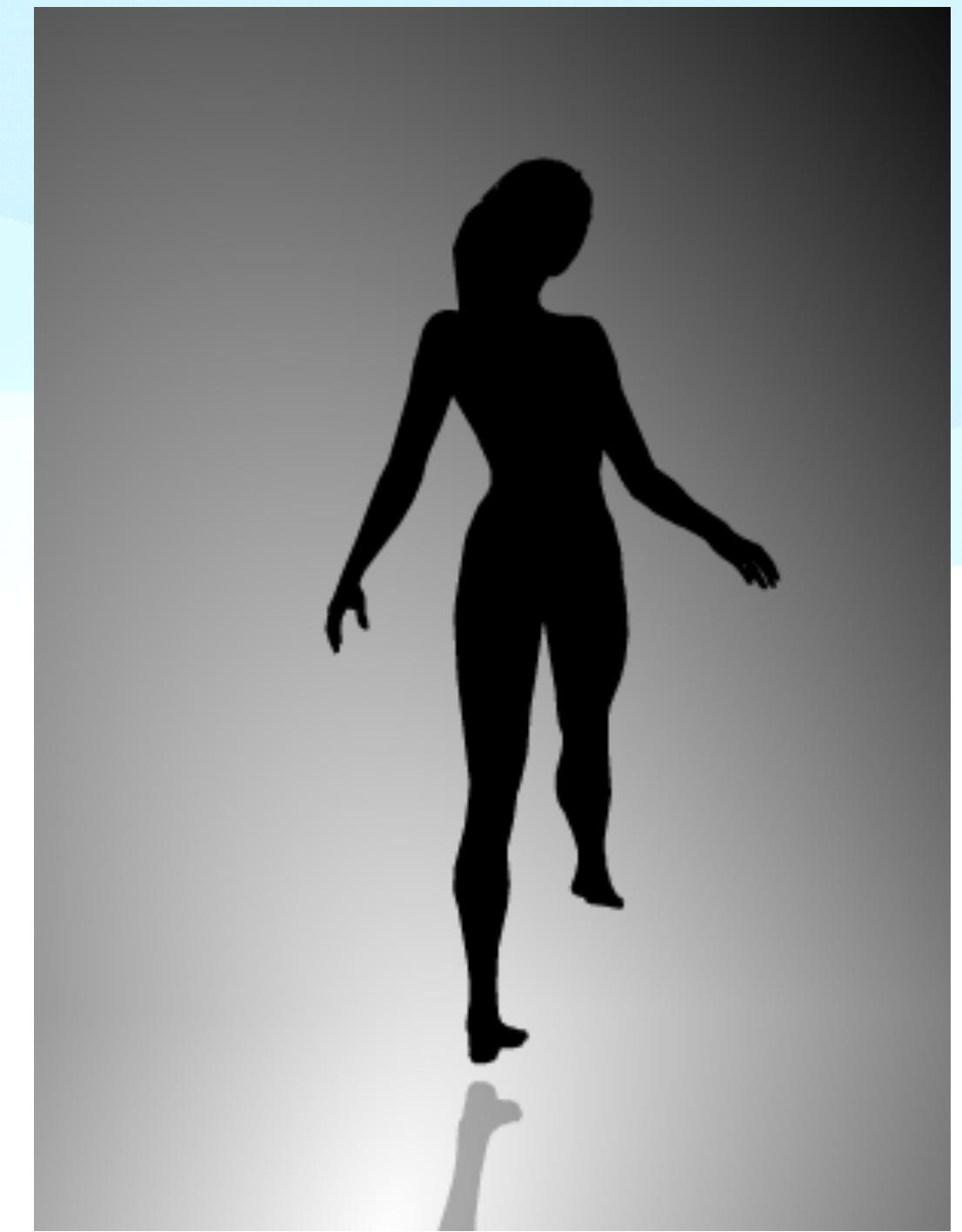


Die funktionelle Magnetresonanztomographie

ein bildgebendes Verfahren

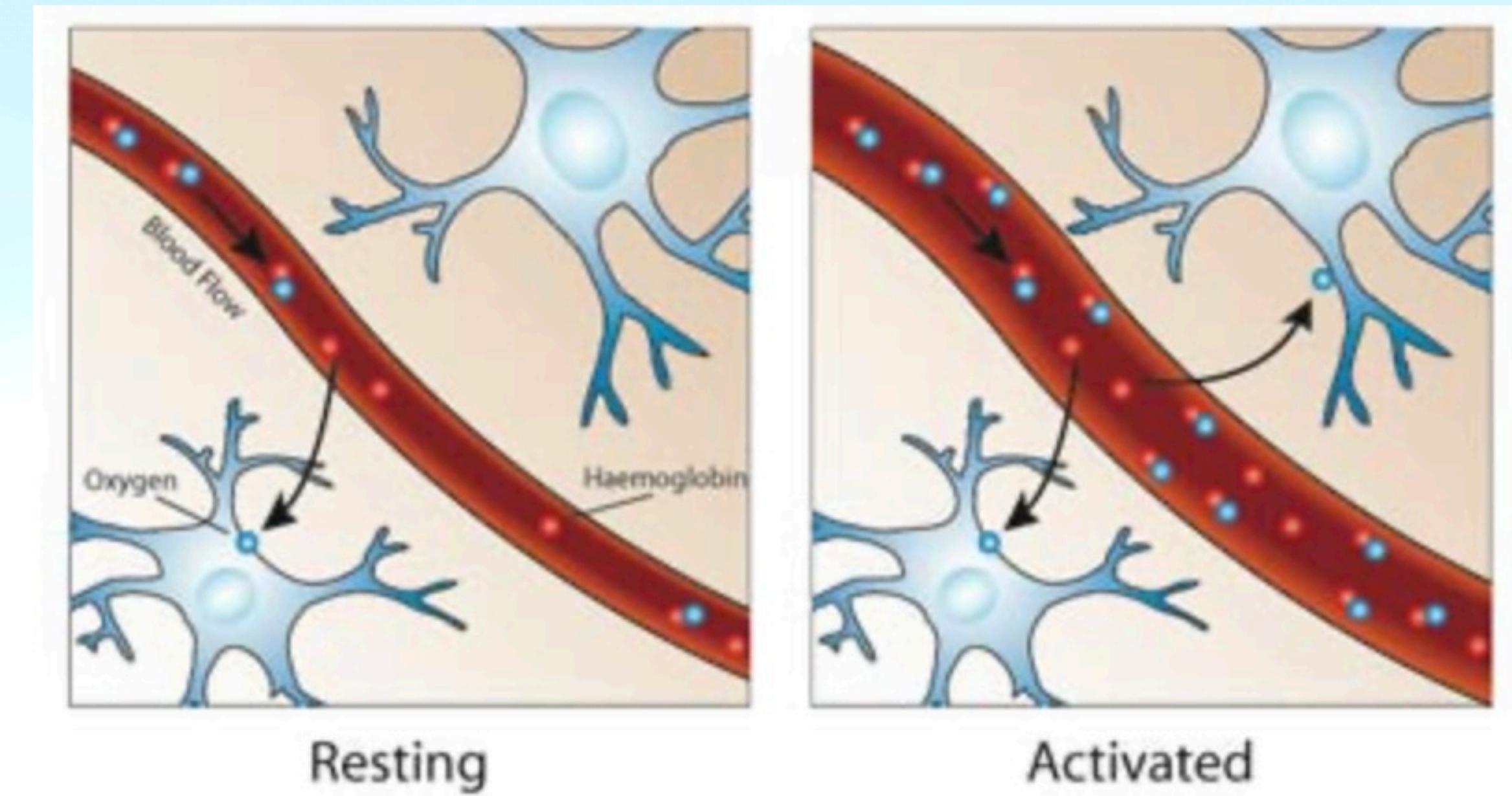
Dustin Maurer
28.06.2023



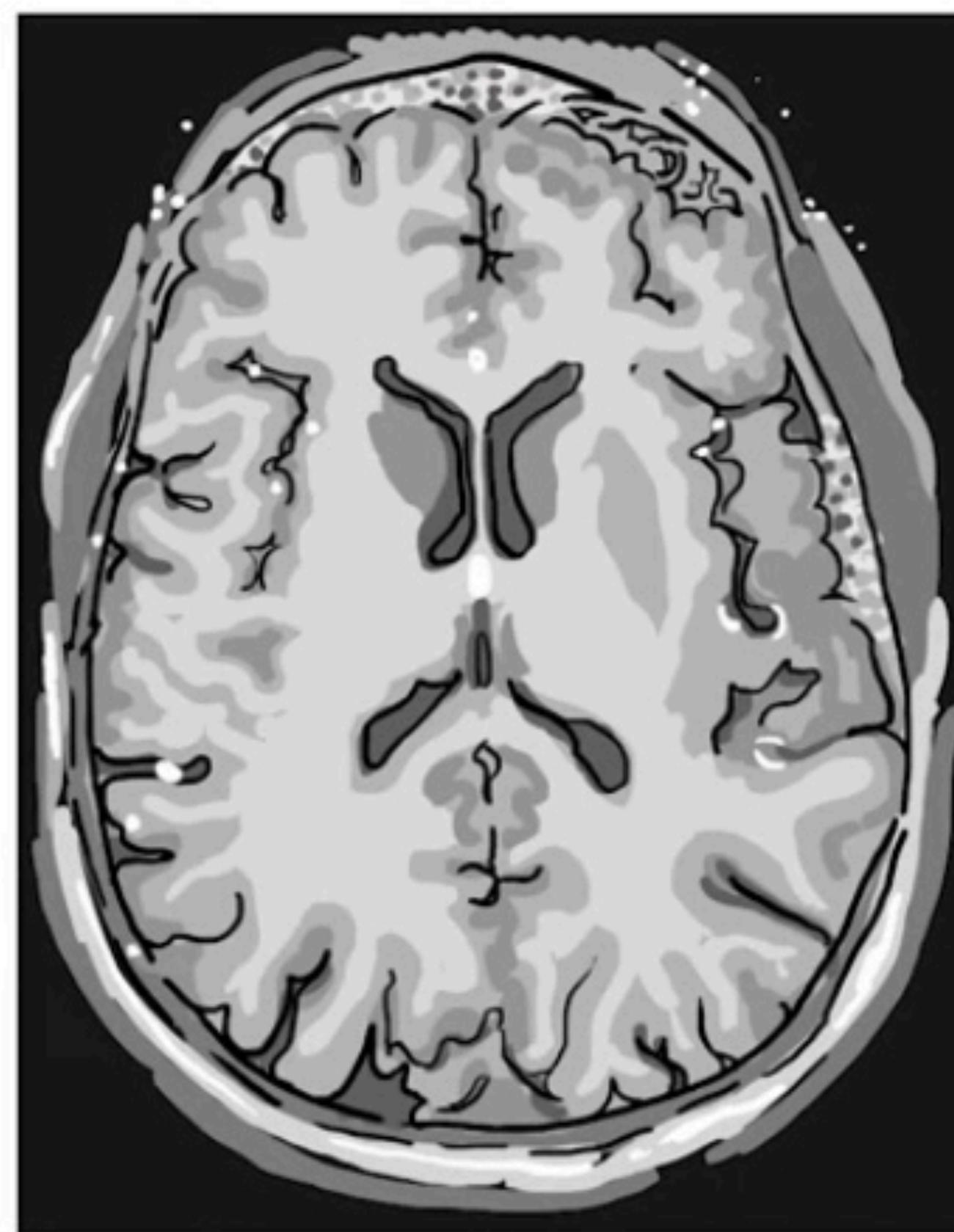
Gliederung

- Grundlagen der fMRT
- Technische Aspekte
- Datenanalyse
- Anwendungsgebiet
- Zusammenfassung & Ausblick
- MATLAB - Image Filtering non-linear

Grundlagen der fMRT

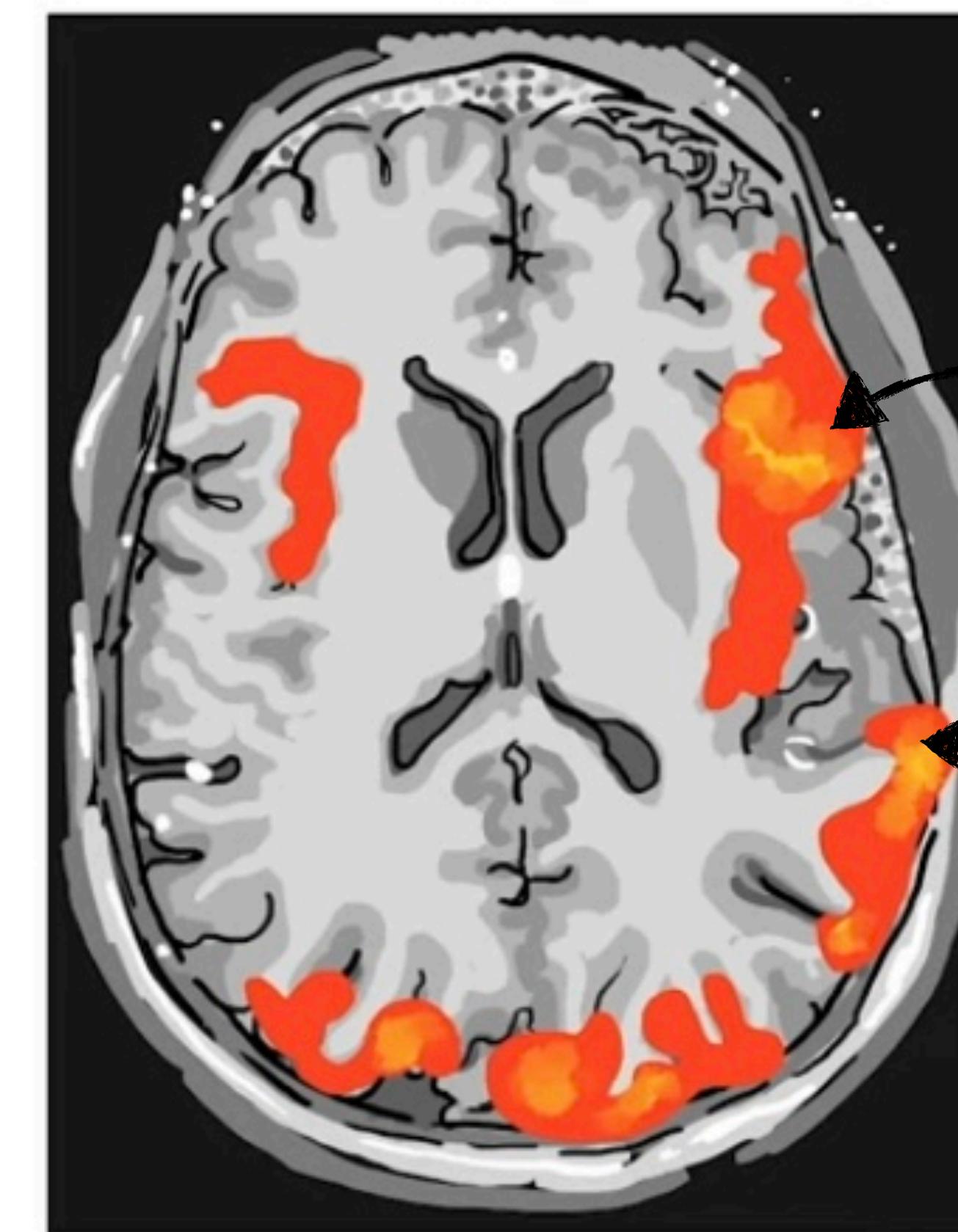


Structural MRI



Brain Structure

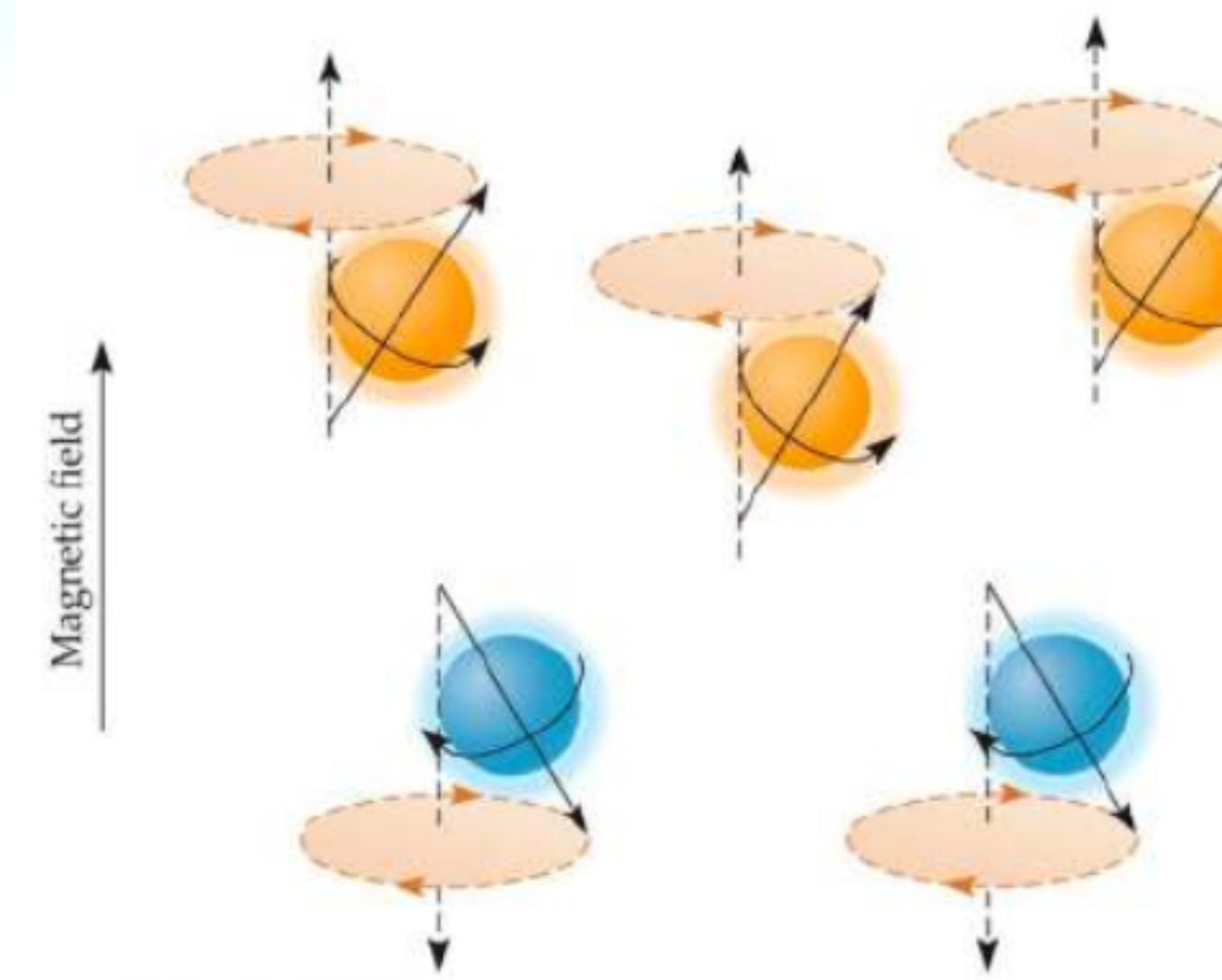
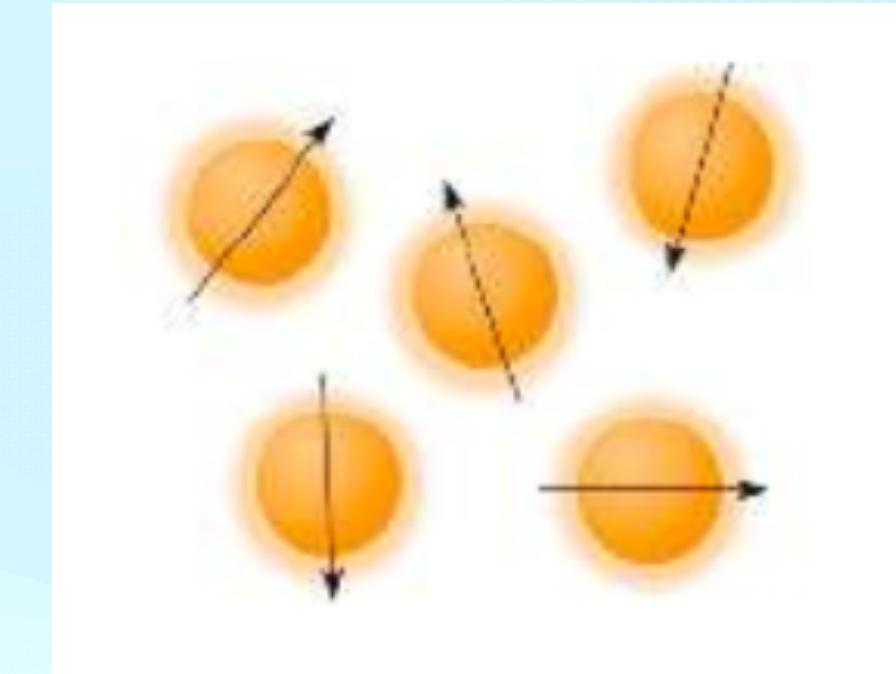
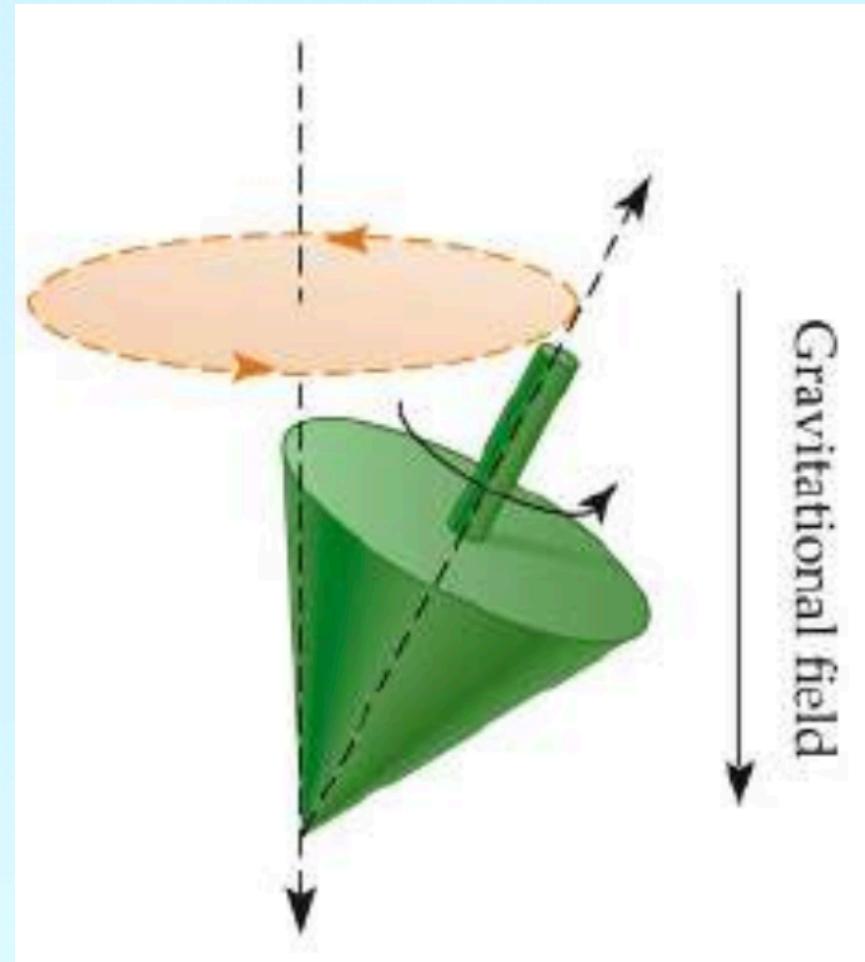
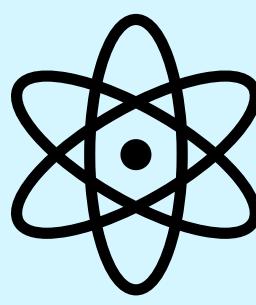
Functional MRI



Brain Activity

active
areas

Physikalische Grundlagen



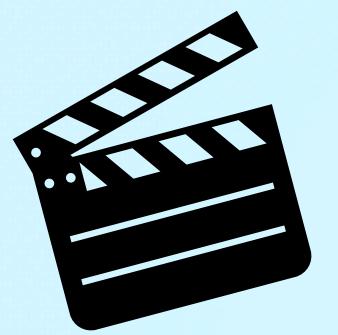
Technische Aspekte von fMRT-Geräten



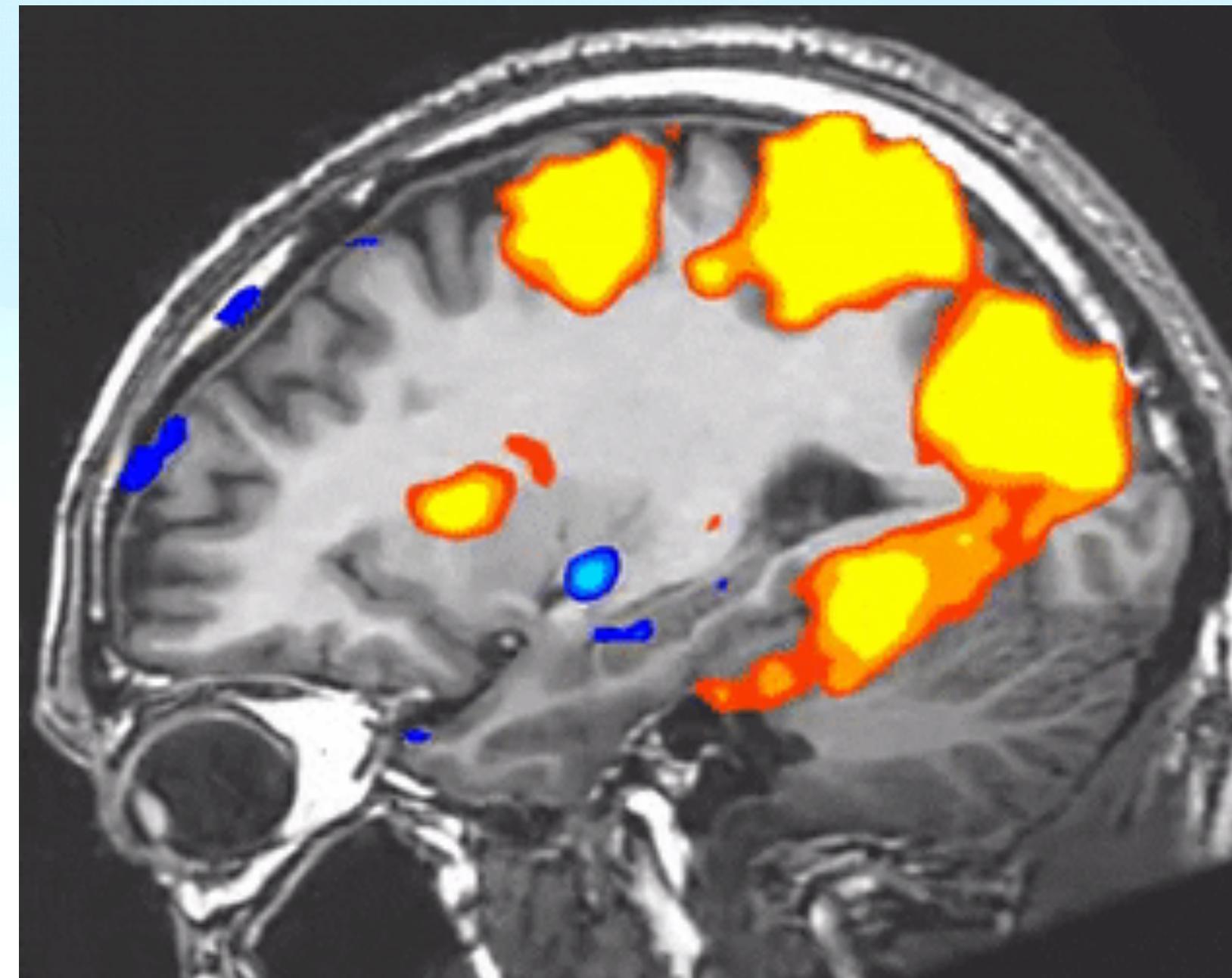
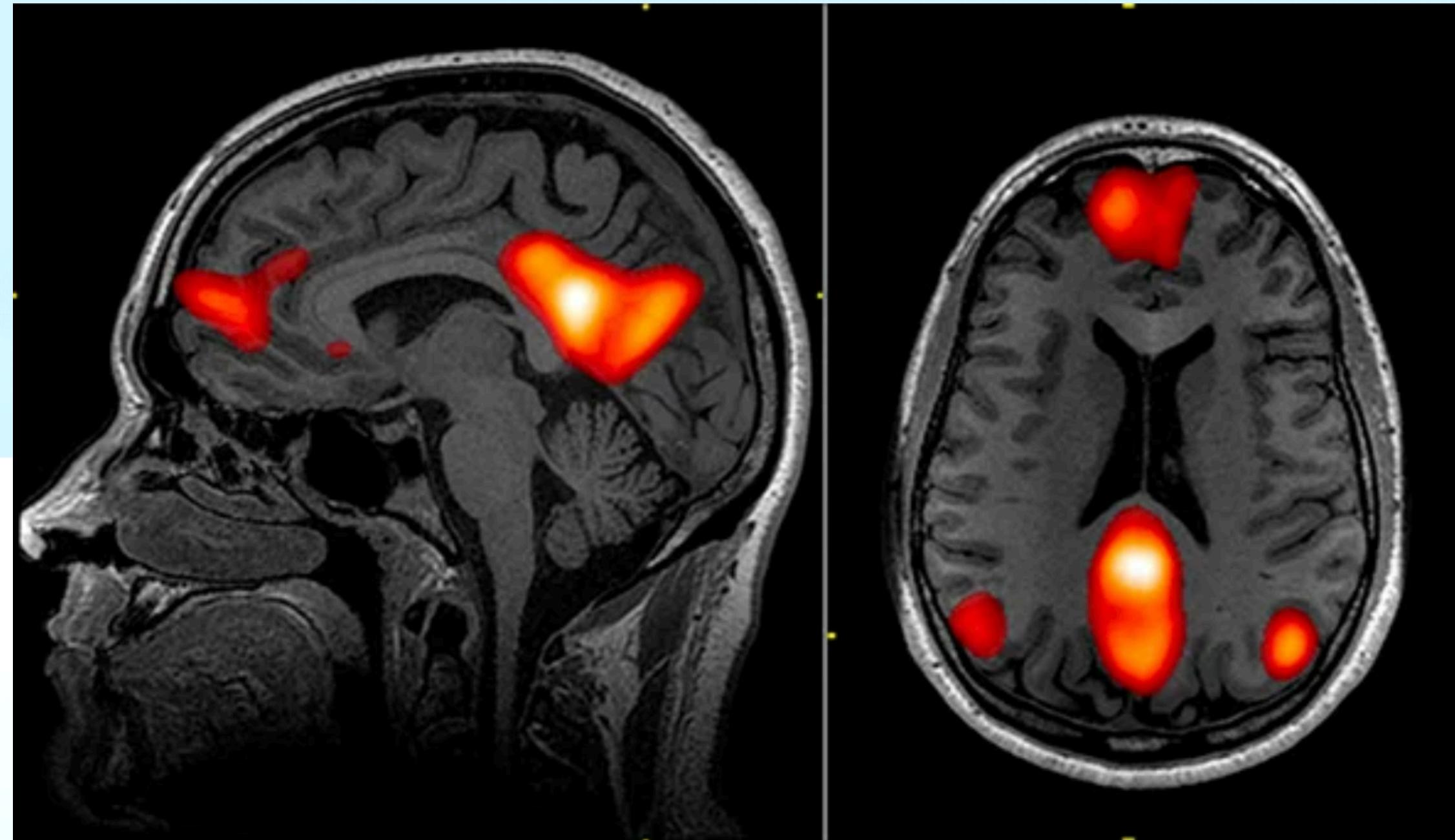
- mind. 10.000 Mal stärker ist als das magnetische Feld der Erde
- basiert auf der Verwendung von starken Magnetfeldern und Radiowellen
- nicht invasiv und verursachen keine ionisierende Strahlung



Datenanalyse

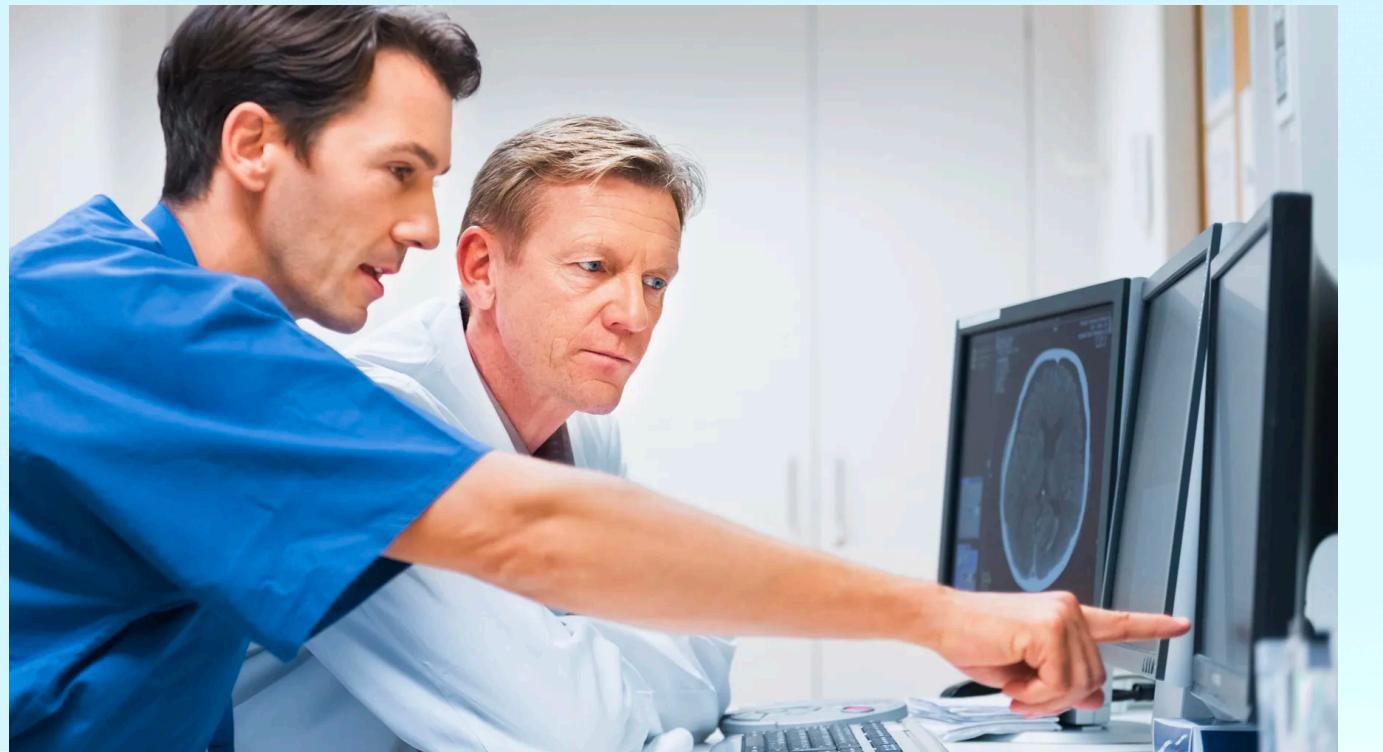
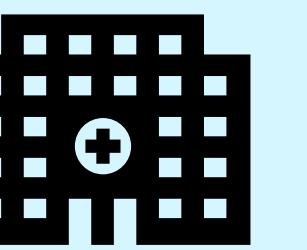


bei fMRI



Anwendungsgebiete

Neuro-Onkologie und Radiotherapie



Zusammenfassung & Ausblick

