Deep Brain Stimulation
Data Analysis for Clinical Support
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Alonso et al., 2017

https://liu.se/en/research/dbs
Deep brain stimulation (DBS)
From "mental imagination" to "intuitive visualization"
Intraoperative measurements

Blood flow and tissue type:
Laser Doppler flowmetry

Tremor:
Wrist accelerometers

Shah et al., Biol Eng Comput 2017 May;55(5):845-858

Wårdell et al., Linköping University
Patient-specific modelling, simulation and visualization of DBS electric fields

Wårdell K et al., In “Patient Specific modelling in Tomorrow’s medicine”
Improvement maps – first example for essential tremor

Axial view  Coronal view  Sagittal view

Shah et al., ESSFN, 2016
Improvement maps – first example for Tourette

The ventral GPi, near the medial (internal) medullary lamina at AC-PC level
Voxels associated with YGTSS alleviation (green) compared to average simulated volume (pink)

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https://liu.se/en/research/dbs
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