

COST B11 Angers, 18.-20.10.2001

Working Group 3

Patient Study: Stereotactic Localization System
and ROI-Definition: WMS, GMS, CSF

Lothar Schad

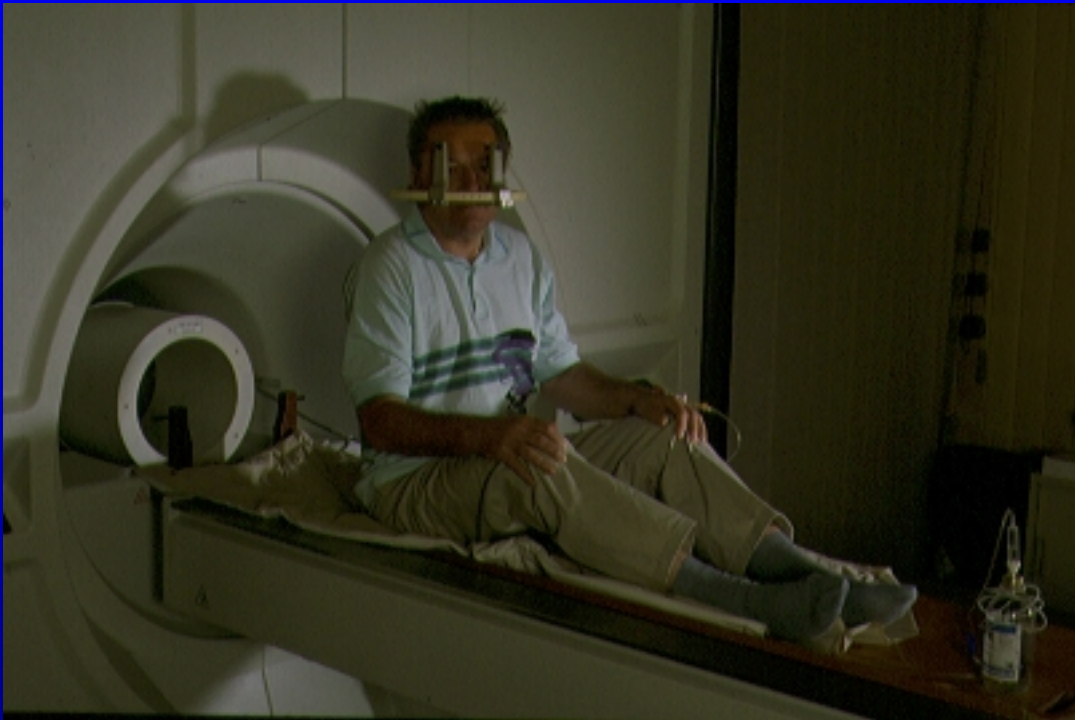


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Stereotactic Localization System

- Bone Fixation



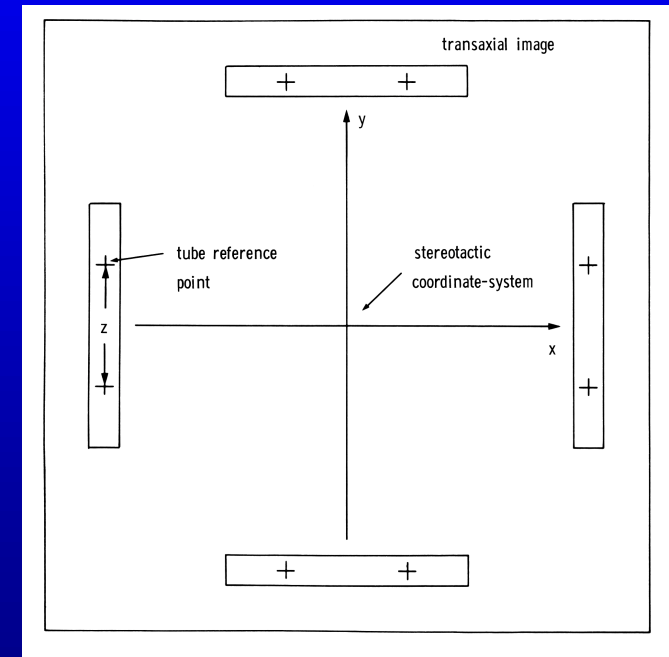
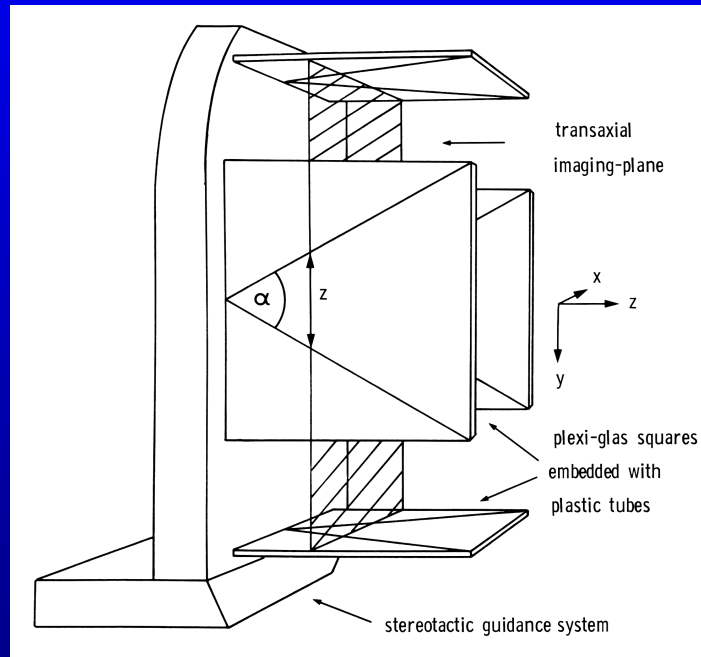
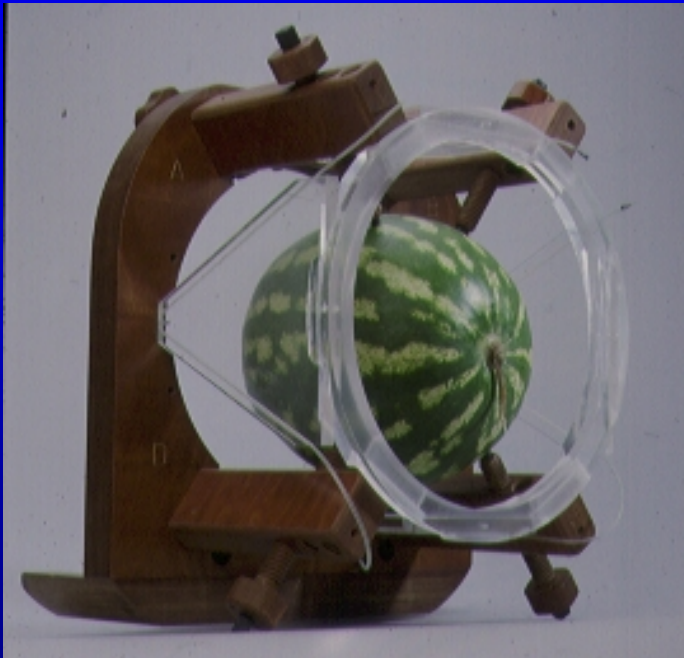
Stereotactic Localization System

- Mask Fixation



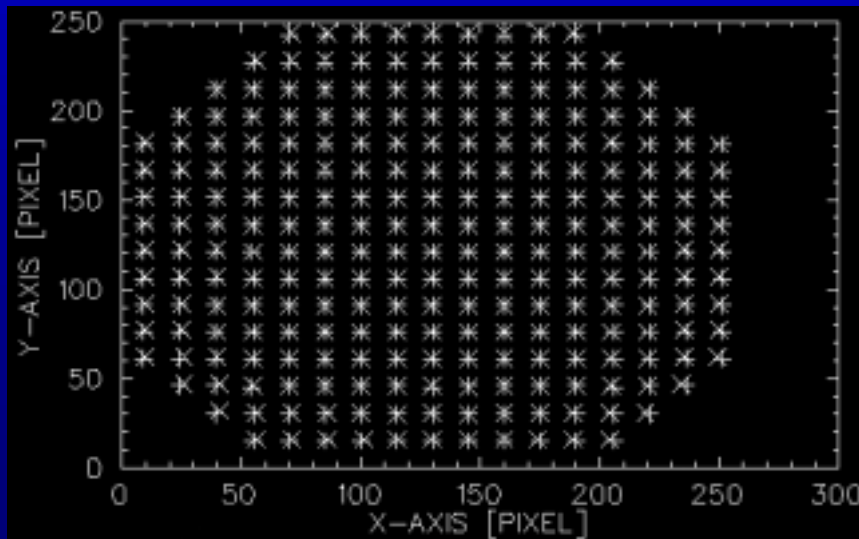
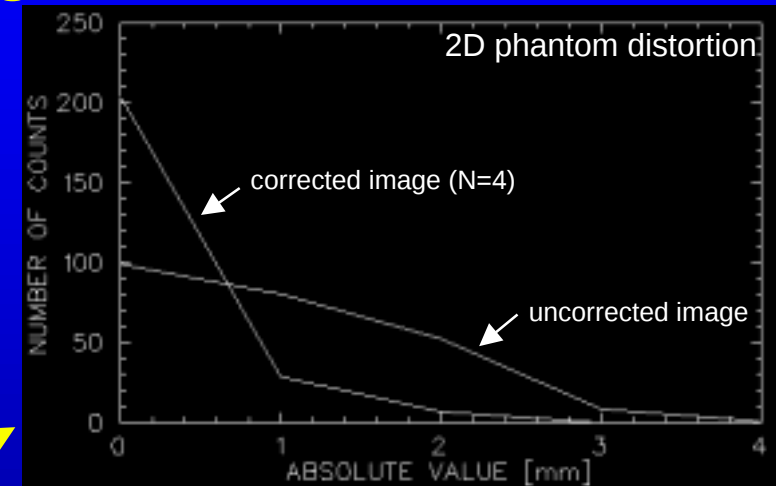
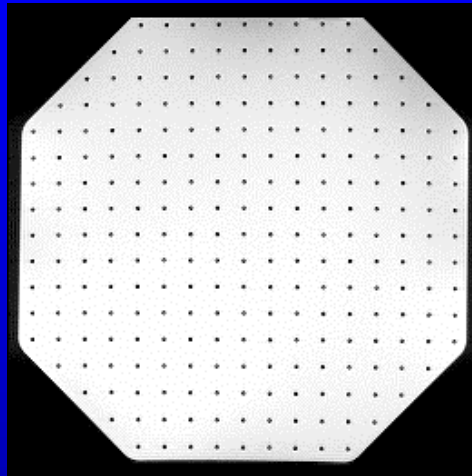
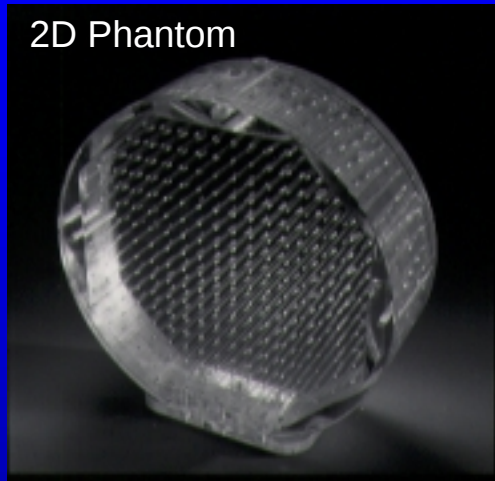
Stereotactic Localization System

- Coordinate System: Stereotactic Reference Points



Stereotaxy & MRI

- Problem: Global Image Distortions



$$u_k = \sum_{i,j=0}^N U_{ij} \cdot x_k^i \cdot y_k^j$$

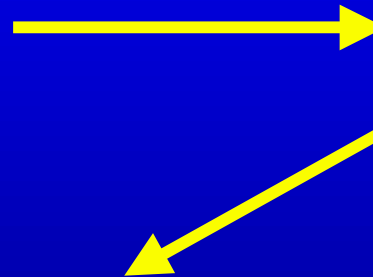
$$v_k = \sum_{i,j=0}^N V_{ij} \cdot x_k^i \cdot y_k^j$$



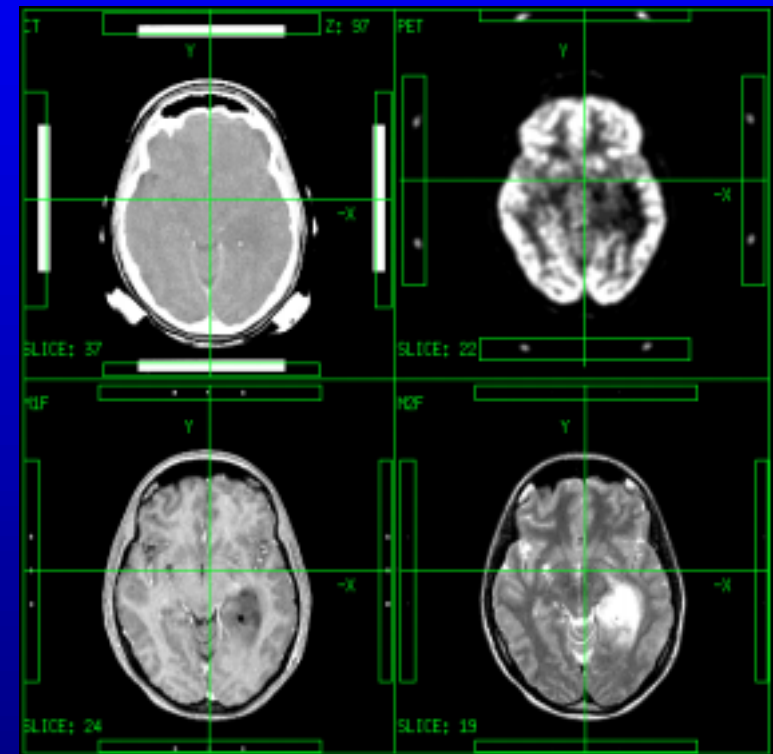
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Stereotaxy

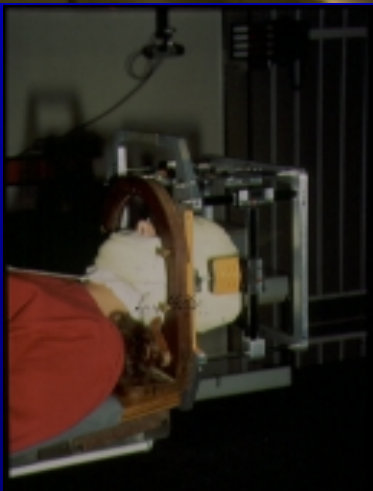
- Image Correlation: CT-MRI-PET



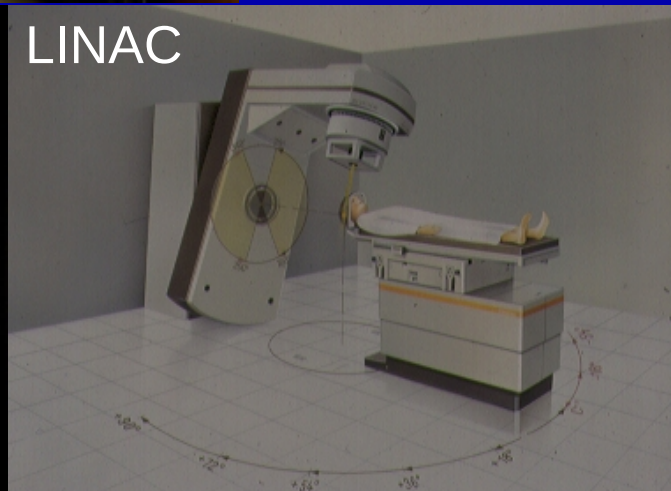
CT-MRI-PET



Patient: Astrozytoma II



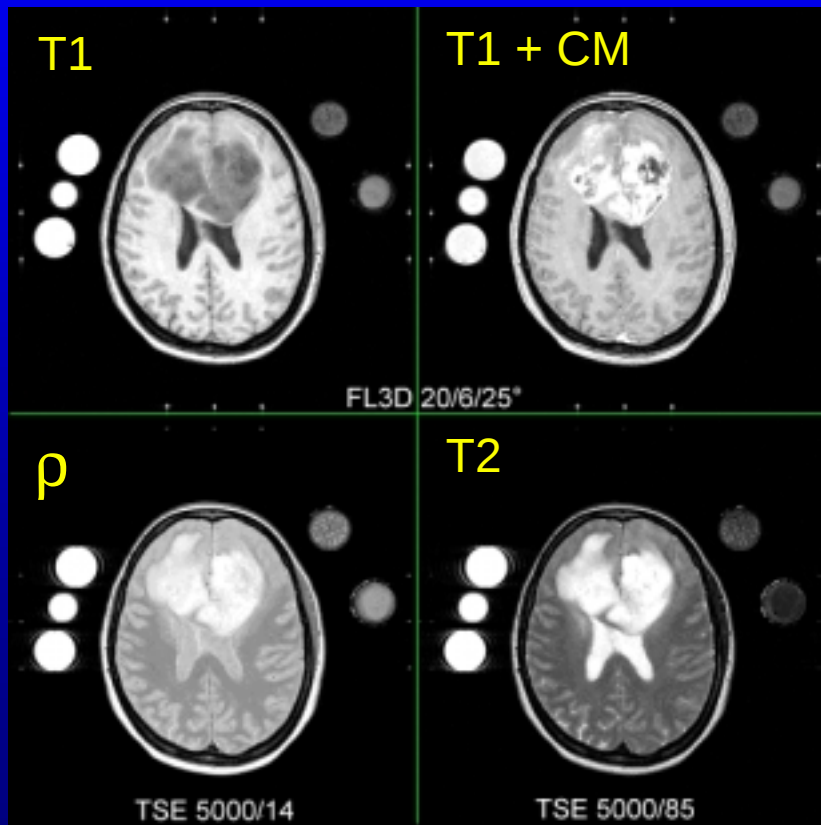
LINAC



ROI Definition: WMS

patient data: Lodz-server:
/ home / costb11 / lothar / clinical examples

763: Glioblastoma

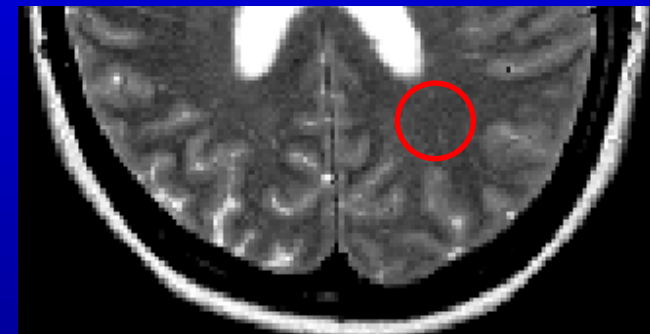


+ easy to define, stable and homogeneous

T1



T2

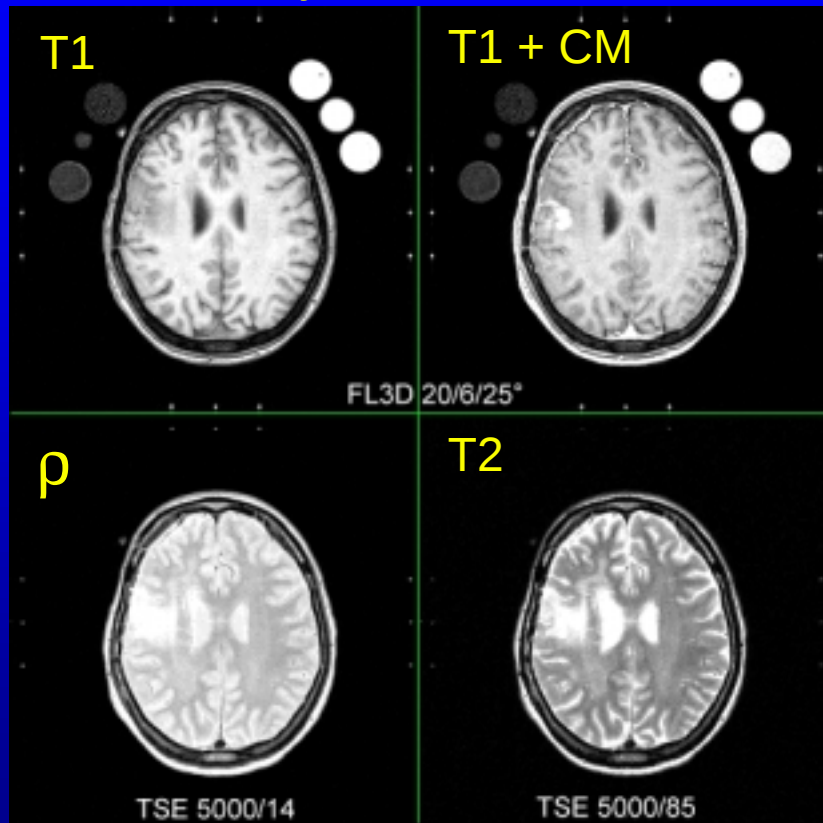


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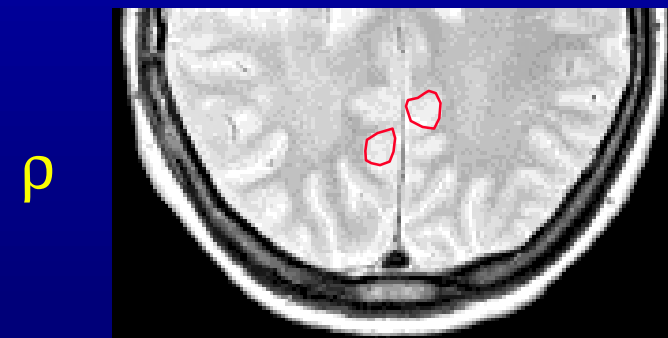
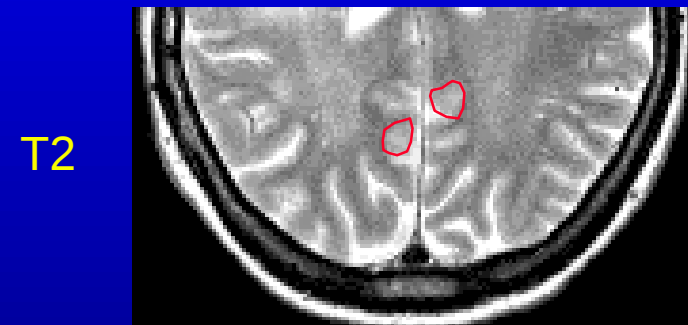
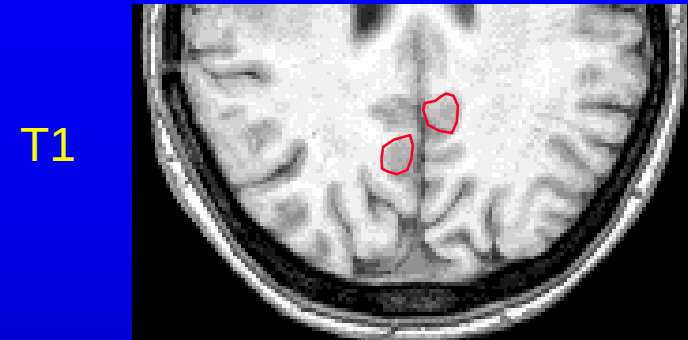


ROI Definition: GMS

807: Astrocytoma

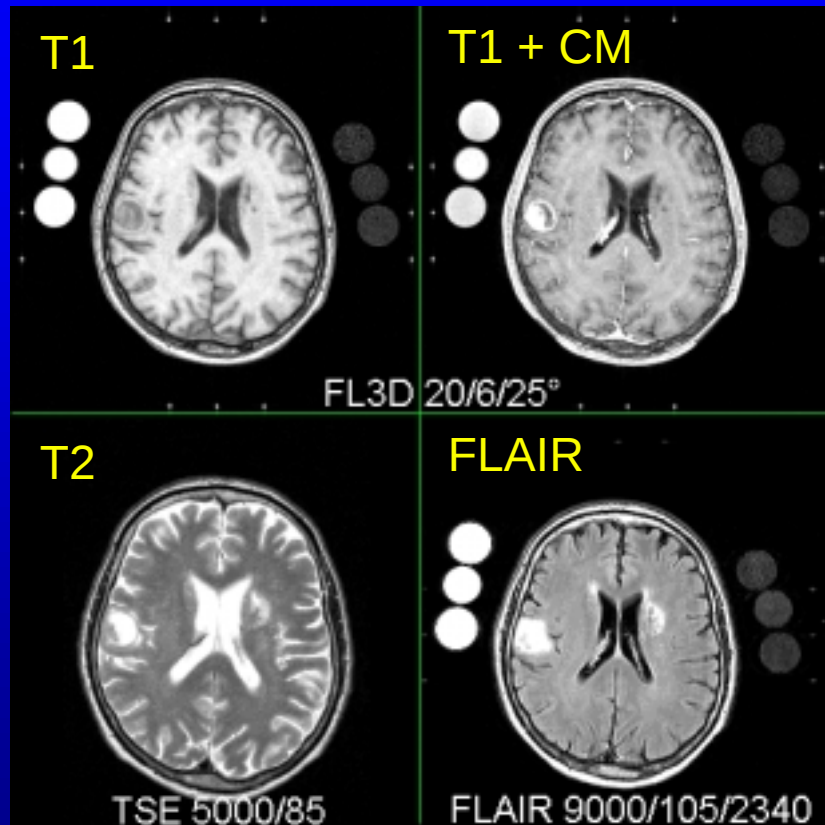


- difficult to define
- small and irregular regions
- partial volume effects with WMS and CSF



ROI Definition: CSF

735: Metastasis



- + easy to define
- partial volume effects with obscured vessels
- CSF pulsation artifacts
- no signals in T1- and FLAIR-images

T1



T2



FLAIR

