MSCV S2

Concepts of medical image post-processing

# PRACTICAL

Management and Post-Processing of Prostate MRI.

1

Christian Mata
Christian.Mata-Miquel@u-bourgogne.fr

Prostate cancer → leading cause of cancer in males.

MRI sequence used for prostate cancer:

- **Anatomy Imaging** – *3D - T2 weighted imaging*

- **Diffusion Imaging** – *ADC (Apparent Diffusion Coefficient)*

- **Perfusion imaging** - *DCE (Dynamic Contrast Enhance)* (observation from signal-intensity time curve)
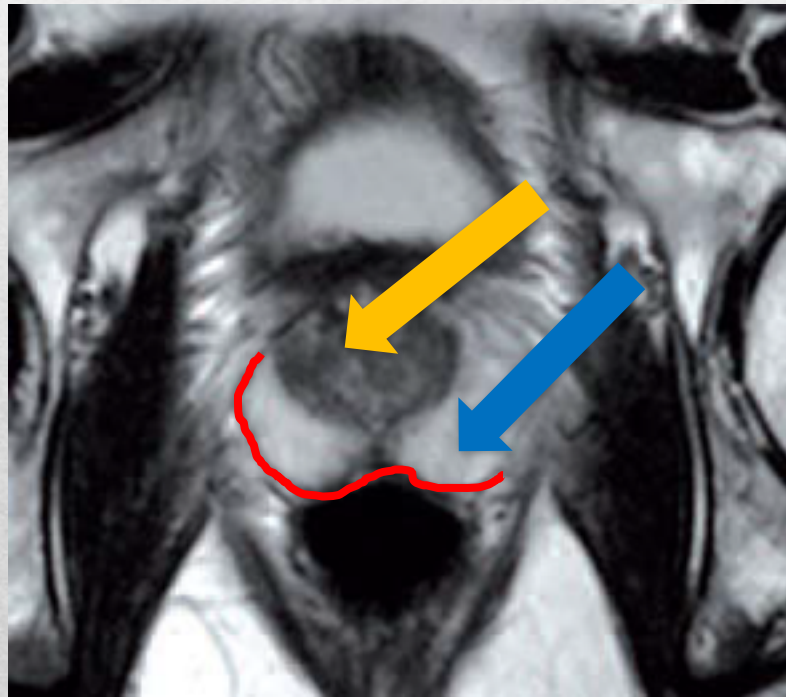
- **Spectroscopy Imaging**
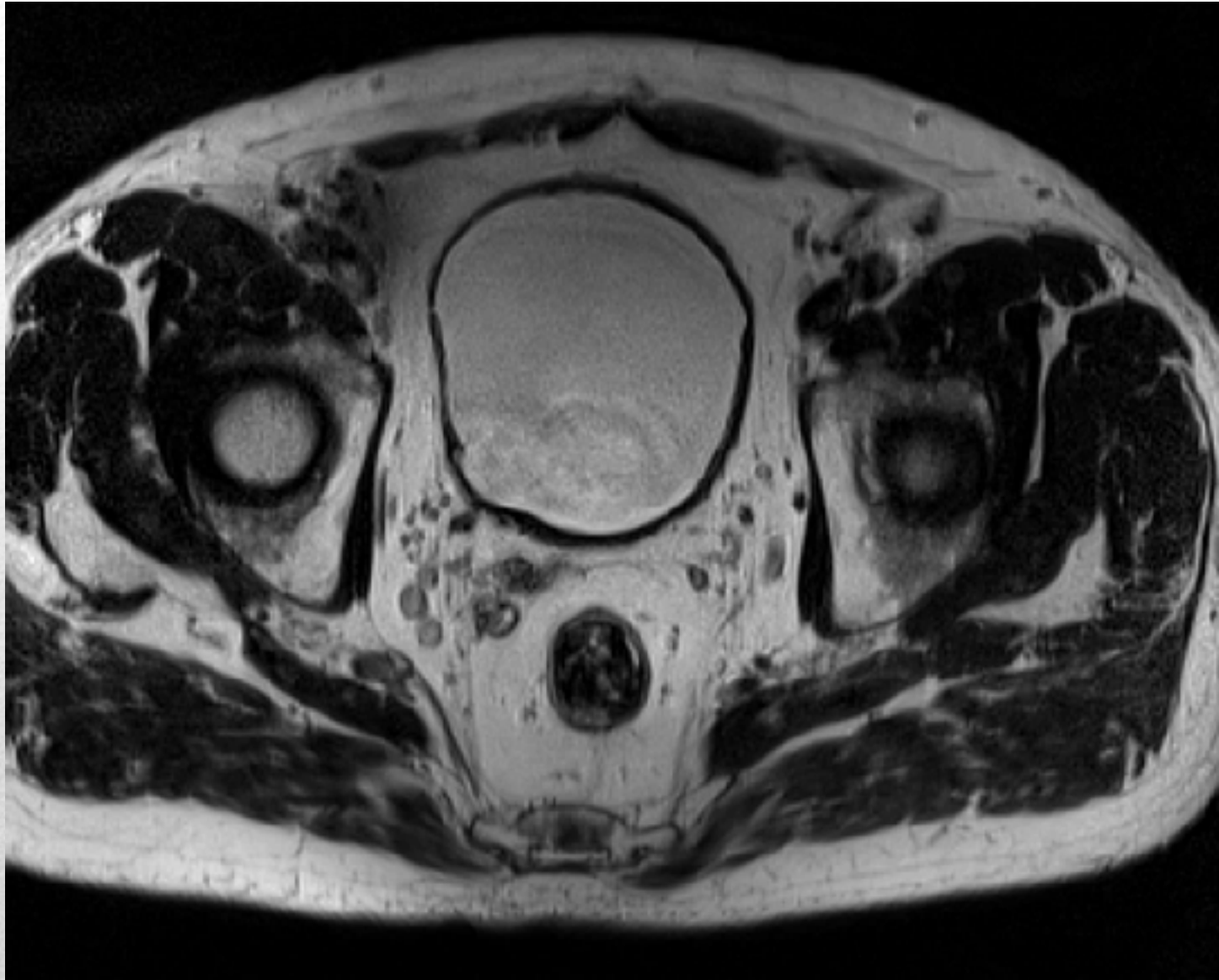
2

http://mriprotocol.blogspot.com.es/2012/10/mri-anatomy-of-prostrate.html

3
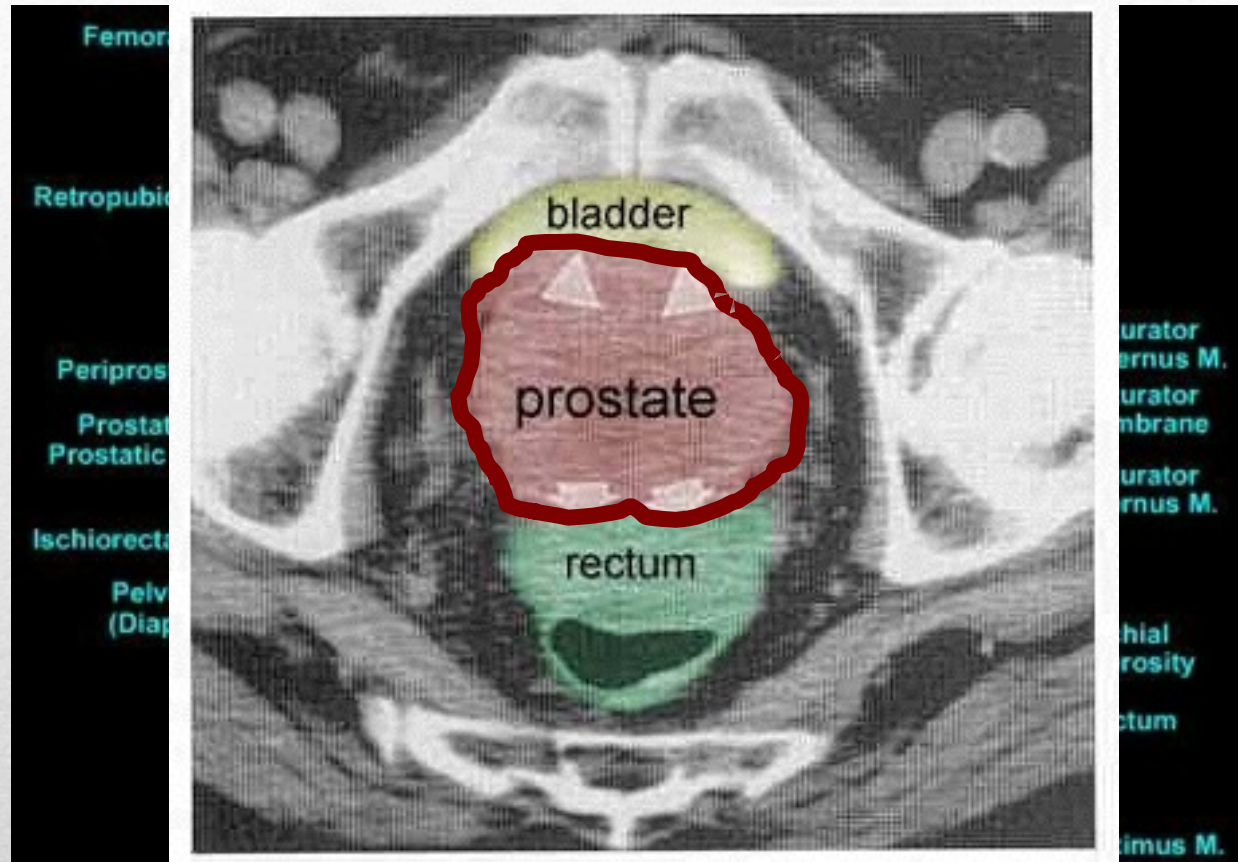
- The **peripheral zone** shows hyperintensity.

- The **transition and central zone** are the constituent of the internal gland. Also, It presents an hypointense.

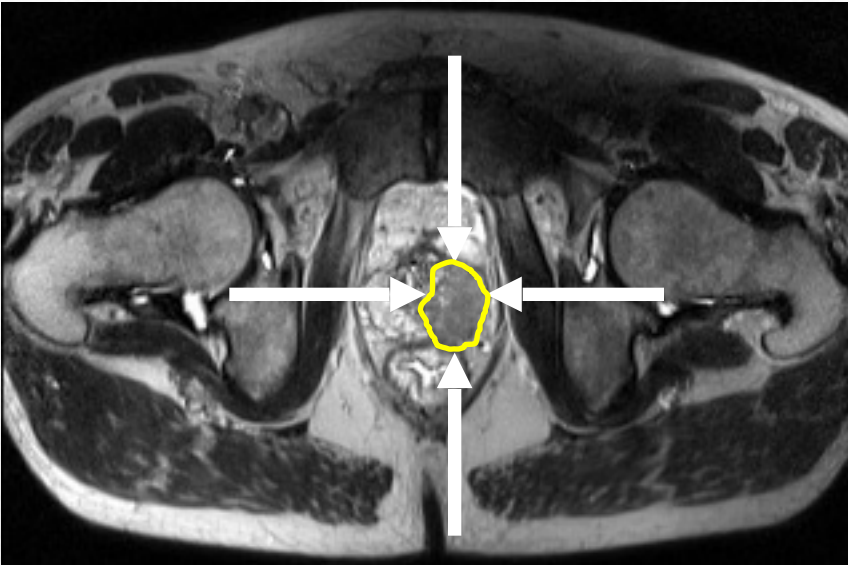- The **prostatic capsule** is visible in the form of edge and hypointense in T2.
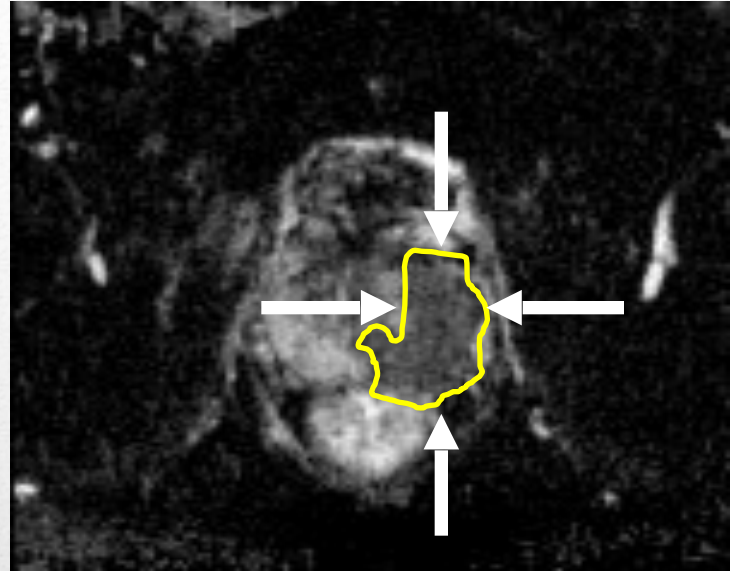

4

5

Trois exemples de cas pathologiques

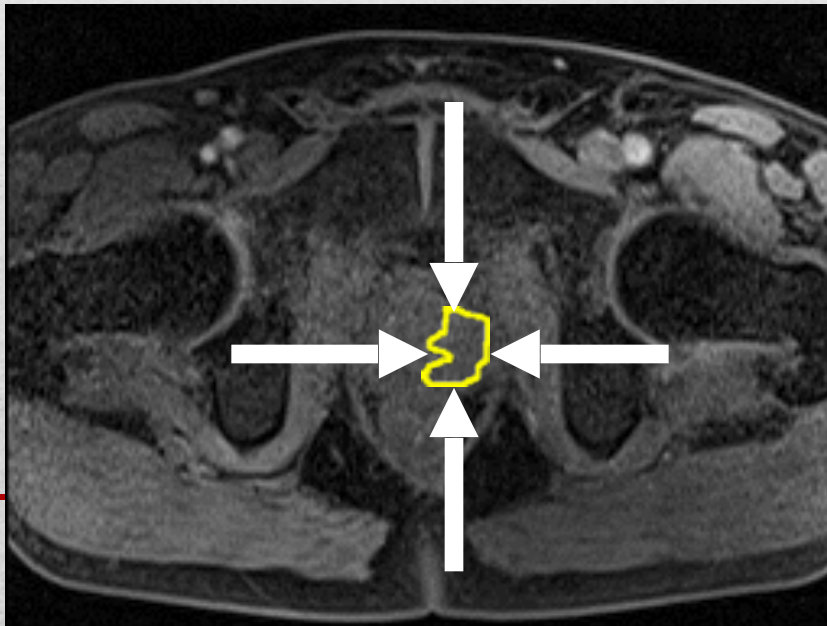## 3D-T2 Anatomy Imaging
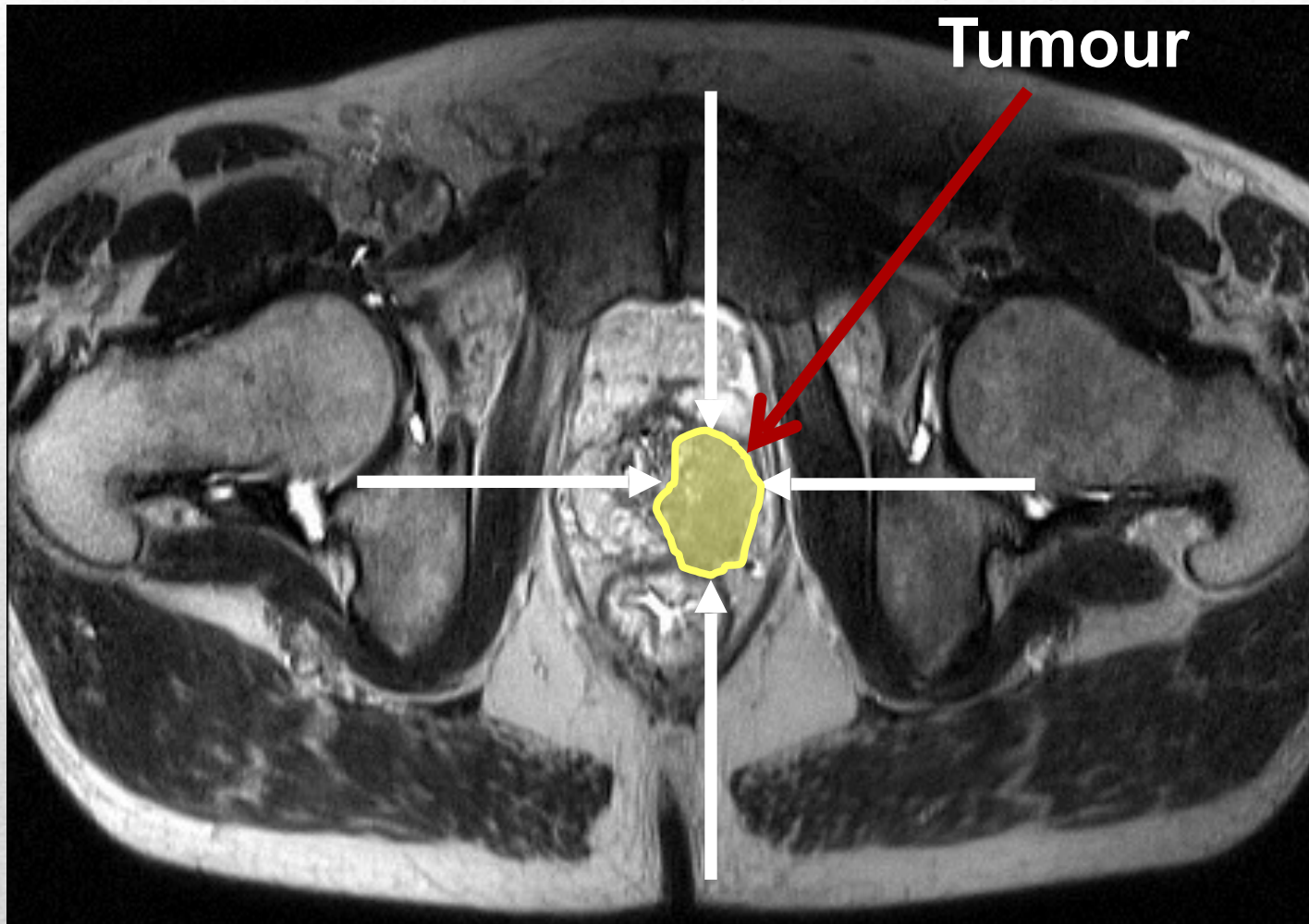

Diffusion Imaging

Perfusion Imaging

6

tumor

tumor

3D-T2 Anatomy Imaging

Tumour
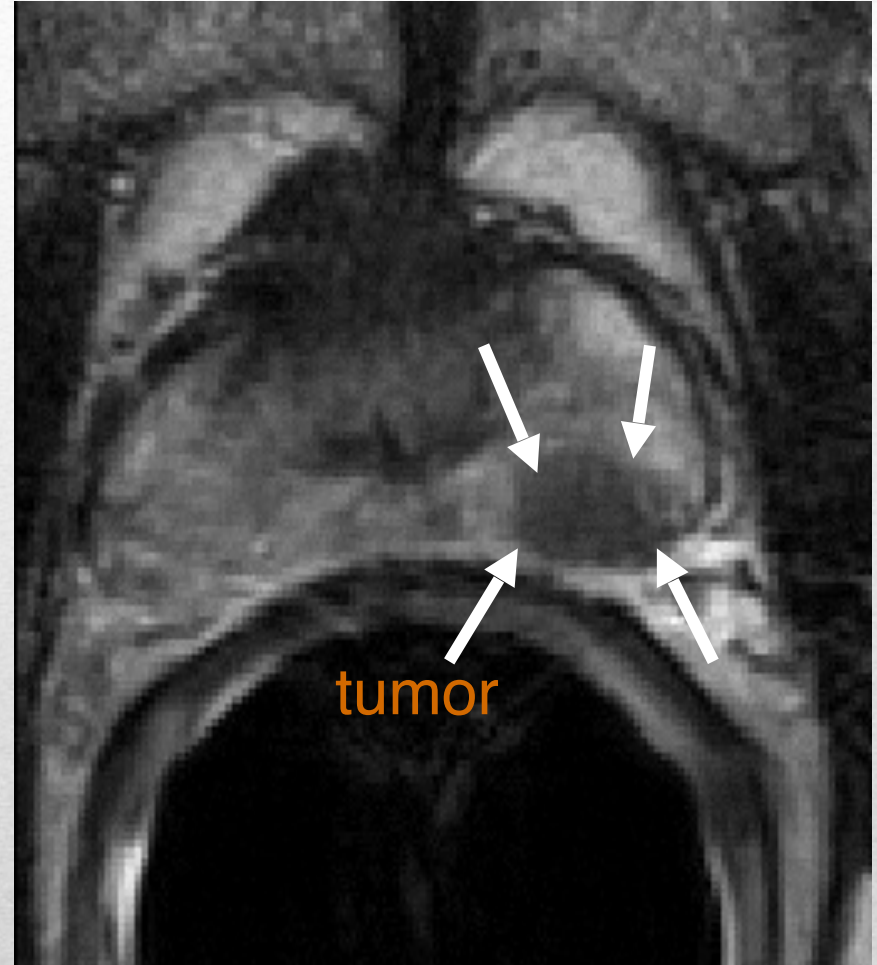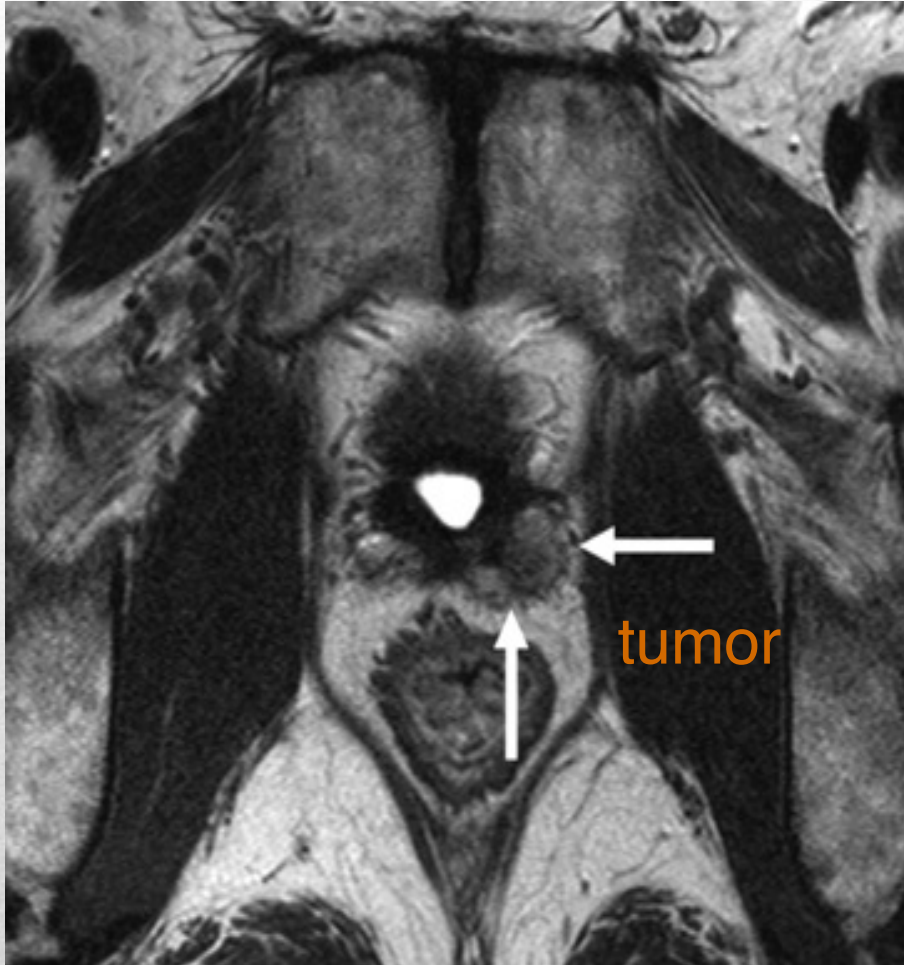
8
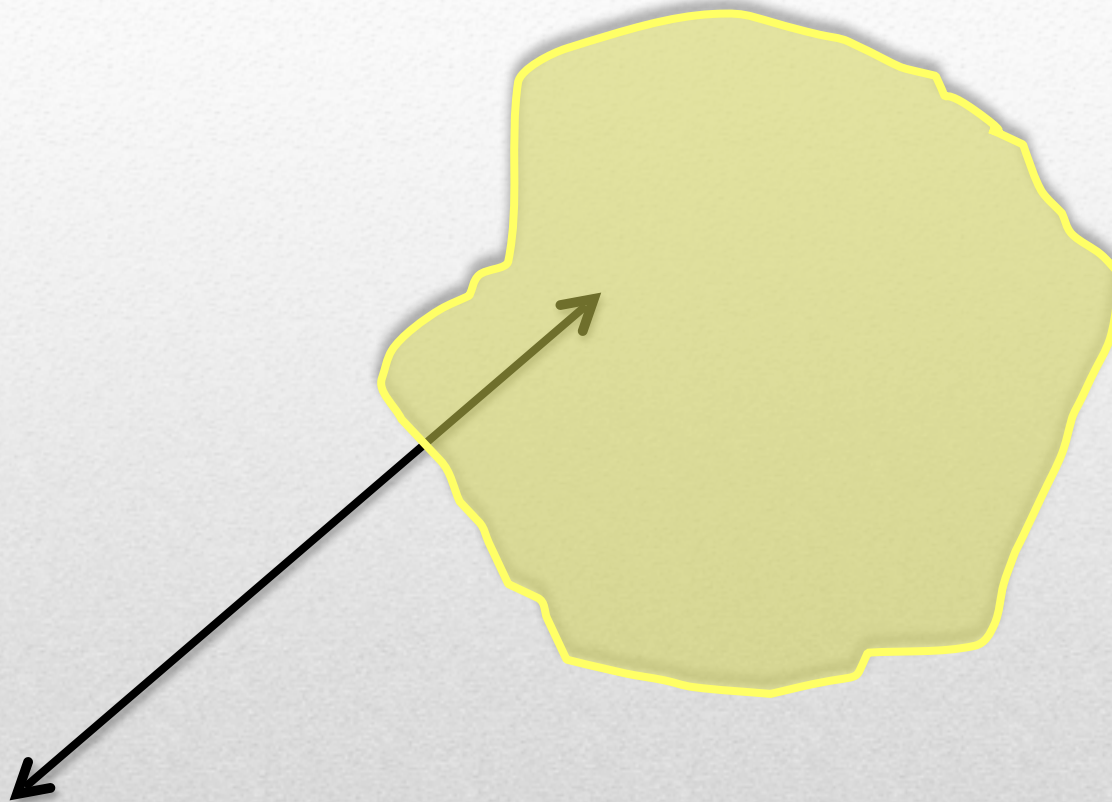
Volume = nombre de pixels **X** la résolution spatiale

Examples of anatomical images

MSCV S2   **Management and Post-Processing of Prostate MRI**
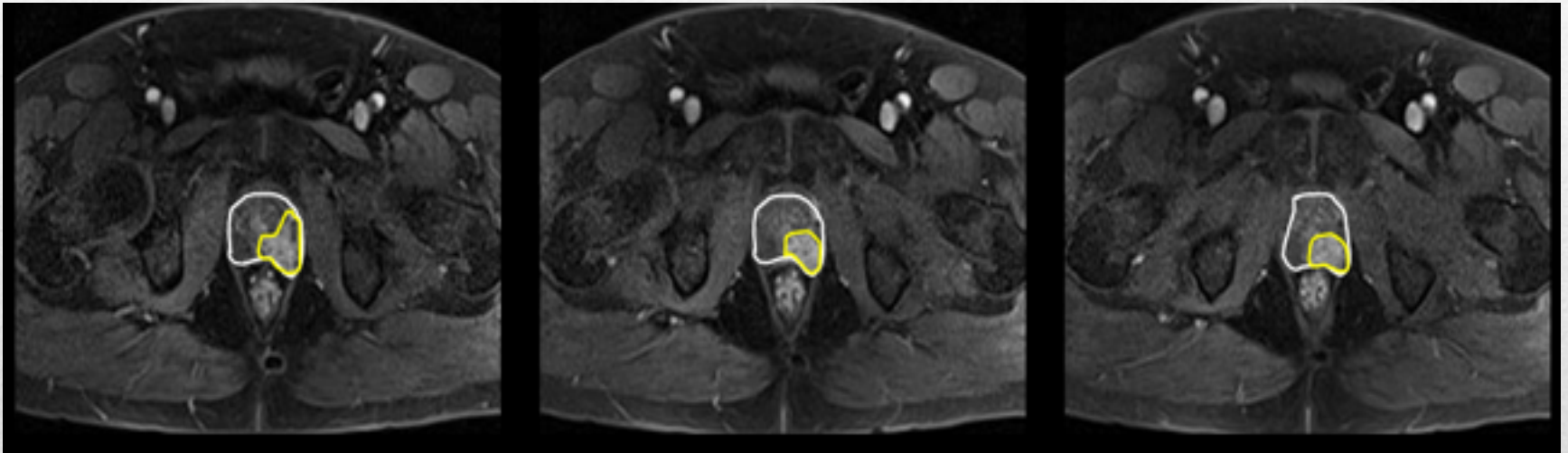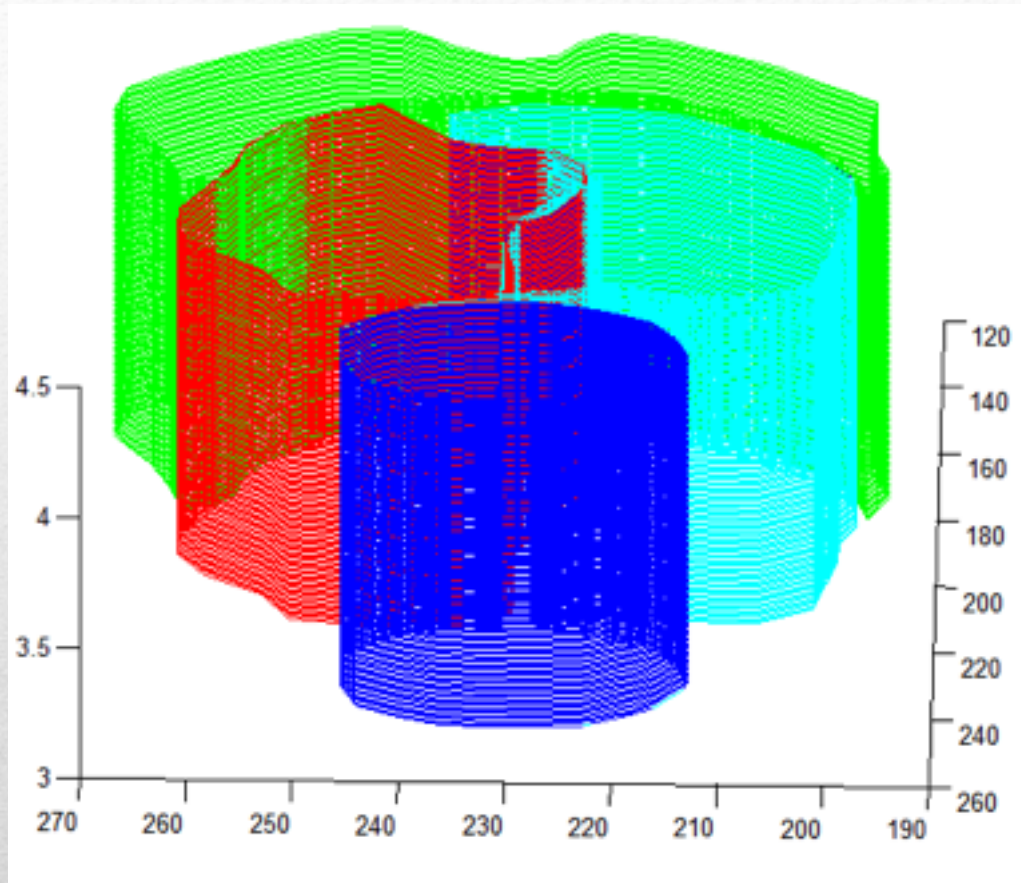
Shows the cortical surface in 3D and image

Communications and Remote Sensing Laboratory, Université catholique de Louvain, B-1348, Louvain-la-Neuve, Belgium.

11

1st stage

- GUI Interface
- Affichage des différentes images
- Gestion des données DICOM

2nd Stage

- Segmentation of different zones: TZ, PZ, CZ, and Tumour
- 3D Représentation for each zone

3ème étape

- Calculate the surface and volume for each Region: TZ, PZ, CZ, and Tumour

~= 4h

~= 6h

~= 2h

12

MSCV S2

Management and Post-Processing of Prostate MRI

- Make a ZIP file containing:

    - **Matlab code (GUI)**
    - **Report**

- Send to Christian.Mata-Miquel@u-bourgogne.fr
                  alain.lalande@u-bourgogne.fr

- **Group of 2 people**

- **Deadline 01/06/2014**

MSCV S2   **Management and Post-Processing of Prostate MRI**