GE validation dataset for BIDS `TablePosition`

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GE validation datasets

Two exams collected with GE phantom landmarked via laser at 794 mm (Exam1486) and 711 mm (Exam1487) while the location of phantom unchanged in world coordinates.

Note that the table landmarked at 794 mm moved further inside bore.

Each exam consists of 6 fMRI series:

Feet-first
1) Localizer
2) fMRI - the SI coverage I11.1 – S15.9
3) fMRI - the SI coverage I21.1 – S10.9
4) fMRI - the SI coverage I01.1 – S25.9

Head-first (Phantom & landmark remains unchanged)
5) Localizer
6) fMRI - the SI coverage I11.1 – S15.9
7) fMRI - the SI coverage I21.1 – S10.9
8) fMRI - the SI coverage I01.1 – S25.9

Courtesy of Emory SPARC

GE DICOM private tags

(0043,10b2) MR Table Position Information:

Ex) (0043,10b2) LO [950\1257.1\-30.4999\0\-9999\-9999]

1) isoVectorZ (Distance from ISO to ALIGN)
2) Landmark
3) **tablePosition + tableDelta**
4) dzPETMR
5) topOfHead
6) distanceFromTopOfHead

(0019,107f) Table delta

Ex) (0019,107f) DS [0.000000]

tableDelta (a.k.a. Table Offset)

(0019,1019) DS [-1.1]   #   4, 1 FirstScanLocation
(0019,101b) DS [25.9] #   4, 1 LastScanLocation

BIDS`TablePosition`
= the 3rd value of (0043,10b2) – (0019,107f)

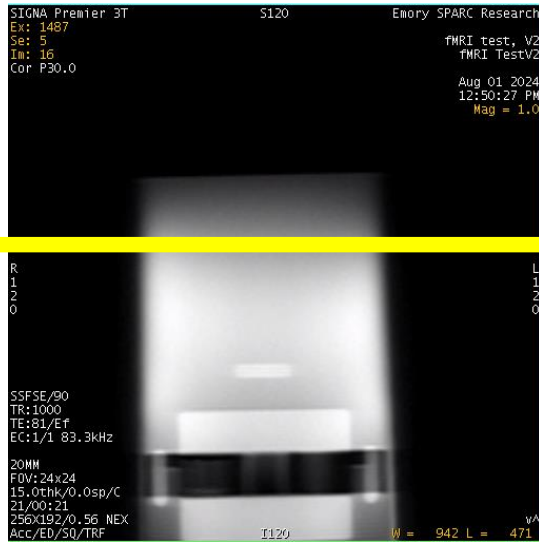# Laser landmarked at 794 mm (ex1486) and 711 mm (ex1487)

Table moved further toward bore

794mm
Ex1486

711mm
Ex1487

Laser landmarked at 794 mm (ex1486)

Feet-first
- 01_3_Plane_Localizer_FF
- 02_Ax_fMRI_FF_I11.1_S15.9
- 03_Ax_fMRI_FF_I21.1_S05.9
- 04_Ax_fMRI_FF_I01.1_S25.9

Head-first
- 05_3_Plane_Localizer_HF
- 06_Ax_fMRI_HF_I11.1_S15.9
- 07_Ax_fMRI_HF_I21.1_S05.9
- 08_Ax_fMRI_HF_I01.1_S25.9

Phantom & landmark
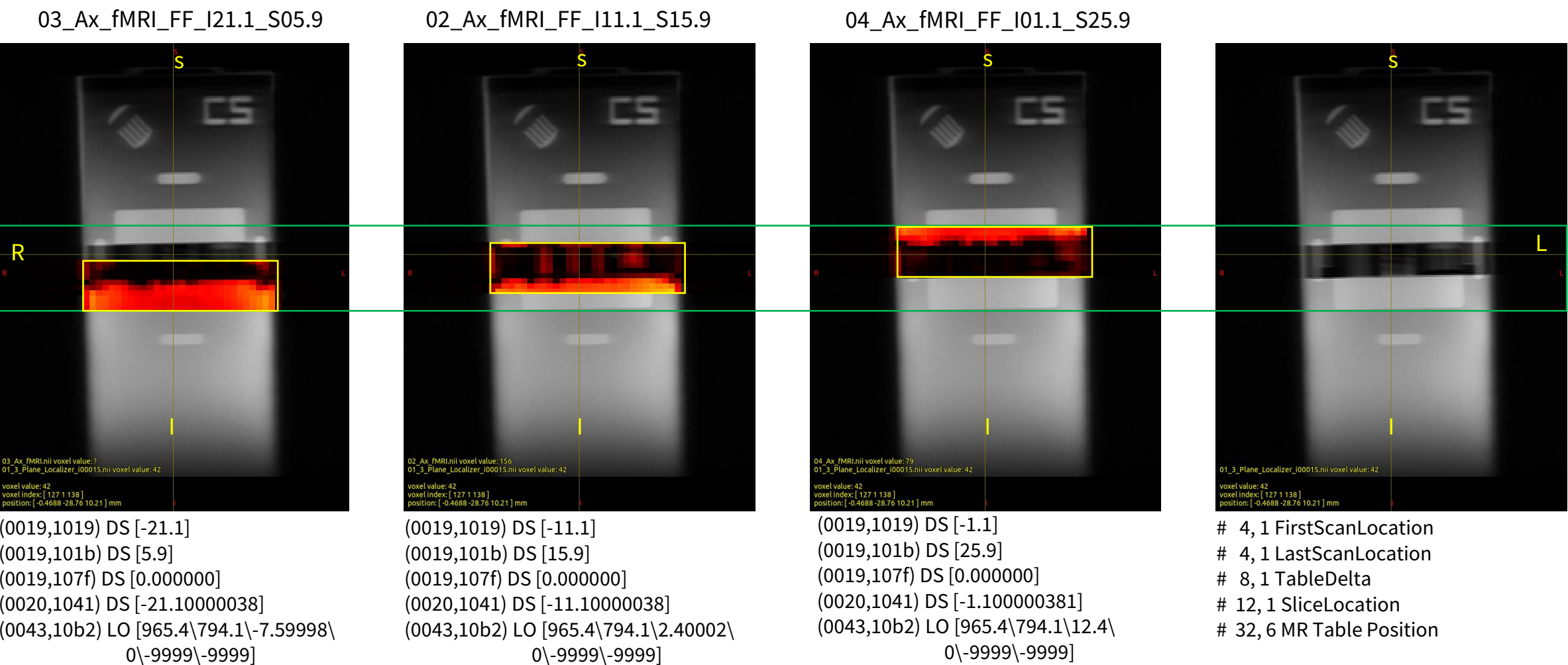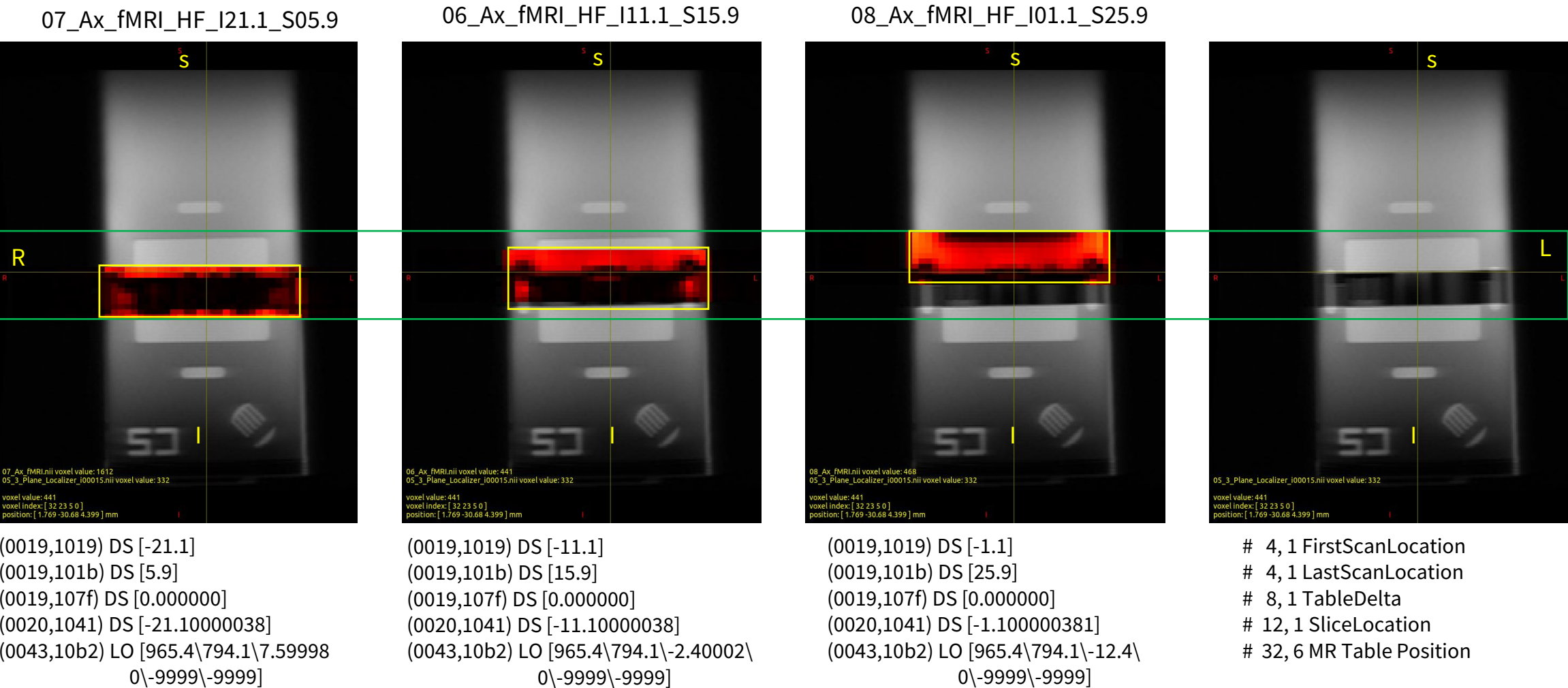remained unchanged
(in world coordinate)

Exam1486, Laser landmarked at 794mm, Feet-first

03_Ax_fMRI_FF_I21.1_S05.9

(0019,1019) DS [-21.1]
(0019,101b) DS [5.9]
(0019,107f) DS [0.000000]
(0020,1041) DS [-21.10000038]
(0043,10b2) LO [965.4\794.1\-7.59998\
    0\-9999\-9999]

02_Ax_fMRI_FF_I11.1_S15.9

(0019,1019) DS [-11.1]
(0019,101b) DS [15.9]
(0019,107f) DS [0.000000]
(0020,1041) DS [-11.10000038]
(0043,10b2) LO [965.4\794.1\2.40002\
    0\-9999\-9999]

04_Ax_fMRI_FF_I01.1_S25.9

(0019,1019) DS [-1.1]
(0019,101b) DS [25.9]
(0019,107f) DS [0.000000]
(0020,1041) DS [-1.100000381]
(0043,10b2) LO [965.4\794.1\12.4\
    0\-9999\-9999]

\# 4, 1 FirstScanLocation
\# 4, 1 LastScanLocation
\# 8, 1 TableDelta
\# 12, 1 SliceLocation
\# 32, 6 MR Table Position

dcmdump 02_*/*.MRDC.1 | egrep -a '0020,1041|0043,10b2||0019,1019|0019,101b|0019,107f)' | awk -F'#' '{print $1}'

Exam1486, Laser landmarked at 794mm, Head-first

07_Ax_fMRI_HF_I21.1_S05.9

06_Ax_fMRI_HF_I11.1_S15.9

08_Ax_fMRI_HF_I01.1_S25.9

(0019,1019) DS [-21.1]
(0019,101b) DS [5.9]
(0019,107f) DS [0.000000]
(0020,1041) DS [-21.10000038]
(0043,10b2) LO [965.4\794.1\7.59998
       0\-9999\-9999]

(0019,1019) DS [-11.1]
(0019,101b) DS [15.9]
(0019,107f) DS [0.000000]
(0020,1041) DS [-11.10000038]
(0043,10b2) LO [965.4\794.1\-2.40002\
       0\-9999\-9999]

(0019,1019) DS [-1.1]
(0019,101b) DS [25.9]
(0019,107f) DS [0.000000]
(0020,1041) DS [-1.100000381]
(0043,10b2) LO [965.4\794.1\-12.4\
       0\-9999\-9999]

4, 1 FirstScanLocation
4, 1 LastScanLocation
8, 1 TableDelta
12, 1 SliceLocation
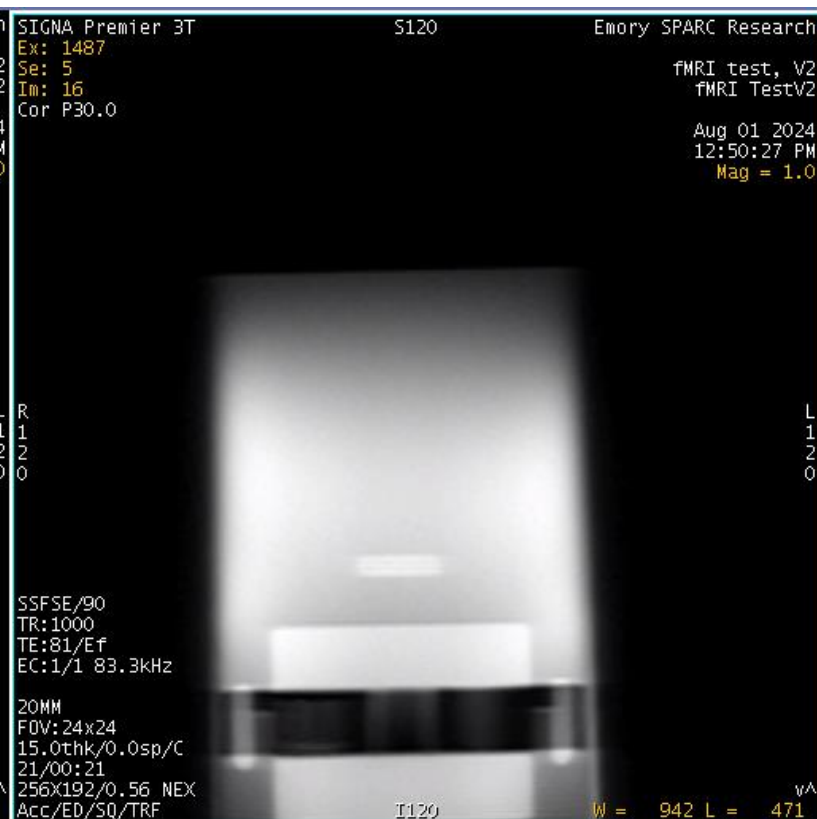# 32, 6 MR Table Position

Laser landmarked at 711 mm (ex1487)

Feet-first
- 01_3_Plane_Localizer_FF
- 02_Ax_fMRI_FF_I11.1_S15.9
- 03_Ax_fMRI_FF_I21.1_S05.9
- 04_Ax_fMRI_FF_I01.1_S25.9

Head-first
- 05_3_Plane_Localizer_HF
- 06_Ax_fMRI_HF_I11.1_S15.9
- 07_Ax_fMRI_HF_I21.1_S05.9
- 08_Ax_fMRI_HF_I01.1_S25.9

Phantom & landmark
remained unchanged
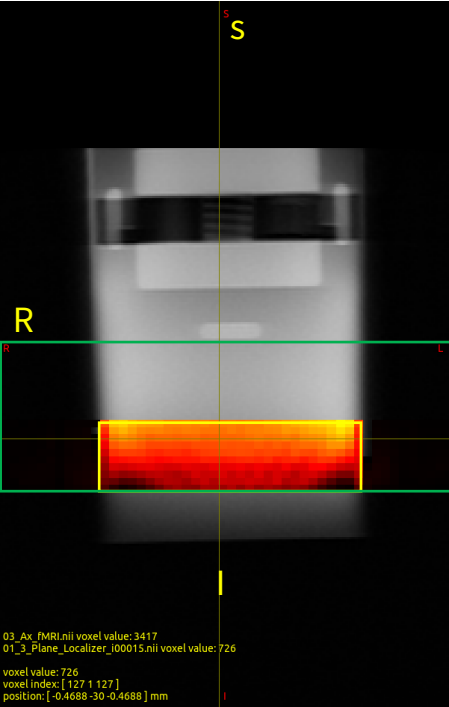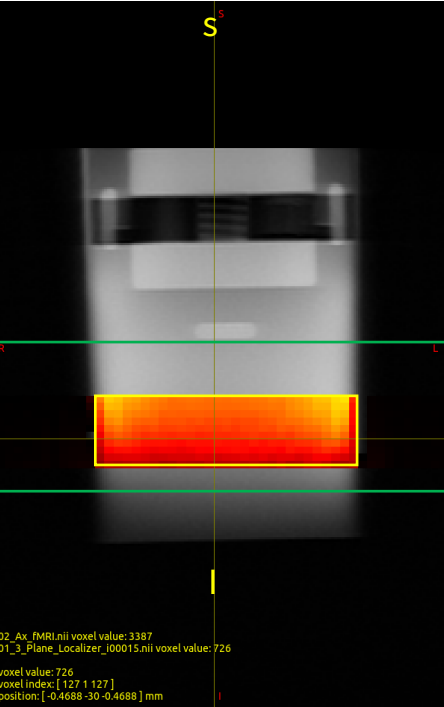(in world coordinate)

Feet-first

Head-first

Exam1487, Laser landmarked at 711mm, Feet-first

03_Ax_fMRI_FF_I21.1_S05.9
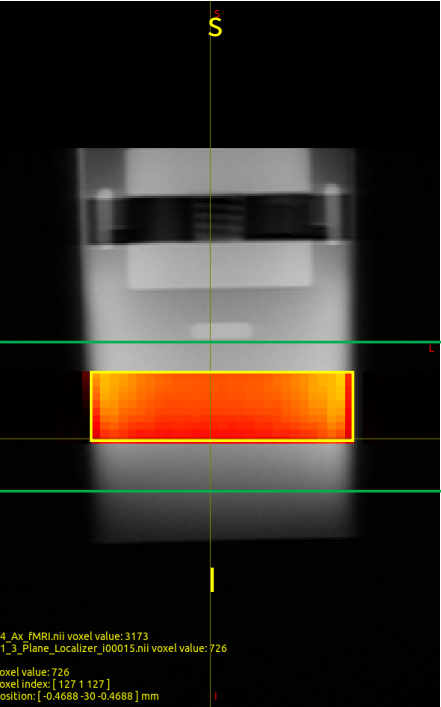
02_Ax_fMRI_FF_I11.1_S15.9

04_Ax_fMRI_FF_I01.1_S25.9

(0019,1019) DS [-21.1]
(0019,101b) DS [5.9]
(0019,107f) DS [0.000000]
(0020,1041) DS [-21.10000038]
(0043,10b2) LO [965.4\710.9\-7.59998\
0\-9999\-9999]

(0019,1019) DS [-11.1]
(0019,101b) DS [15.9]
(0019,107f) DS [0.000000]
(0020,1041) DS [-11.10000038]
(0043,10b2) LO [965.4\710.9\2.40002
0\-9999\-9999]

(0019,1019) DS [-1.1]
(0019,101b) DS [25.9]
(0019,107f) DS [0.000000]
(0020,1041) DS [-1.100000381]
(0043,10b2) LO [965.4\710.9\12.4
0\-9999\-9999]

4, 1 FirstScanLocation
4, 1 LastScanLocation
8, 1 TableDelta
12, 1 SliceLocation
32, 6 MR Table Position

Exam1487, Laser landmarked at 711mm, Head-first

07_Ax_fMRI_HF_I21.1_S05.9

(0019,1019) DS [-21.1]
(0019,101b) DS [5.9]
(0019,107f) DS [0.000000]
(0020,1041) DS [-21.10000038]
(0043,10b2) LO [965.4\710.9\7.59998\
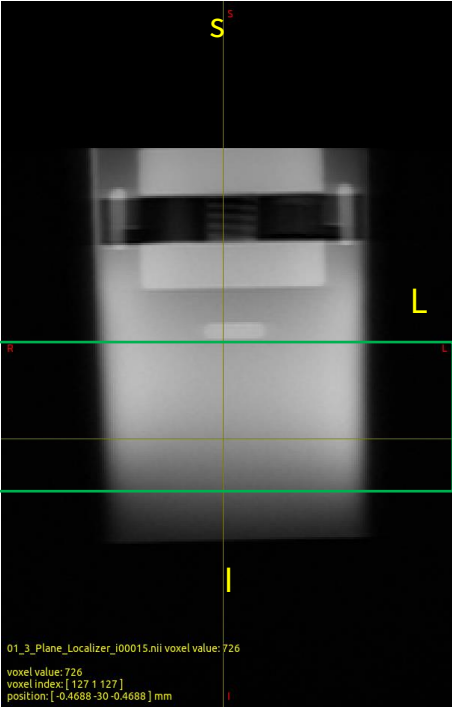0\-9999\-9999]

06_Ax_fMRI_HF_I11.1_S15.9

(0019,1019) DS [-11.1]
(0019,101b) DS [15.9]
(0019,107f) DS [0.000000]
(0020,1041) DS [-11.10000038]
(0043,10b2) LO [965.4\710.9\-2.40002
0\-9999\-9999]

08_Ax_fMRI_HF_I01.1_S25.9

(0019,1019) DS [-1.1]
(0019,101b) DS [25.9]
(0019,107f) DS [0.000000]
(0020,1041) DS [-1.100000381]
(0043,10b2) LO [965.4\710.9\-12.4\
0\-9999\-9999]

4, 1 FirstScanLocation
4, 1 LastScanLocation
8, 1 TableDelta
12, 1 SliceLocation
32, 6 MR Table Position