Table 1.1: Overview of UHF laminar fMRI studies published till April 2019.

Year	Authors	Brain area	Anatomical	Functional	Multi-session	fMRI processing	Distortion-correction	Co-registration	Anatomical processing	Laminar analysis
2010	Polimeni et al.	V1	MEMPRAGE (1 mm)	2D-EPI (1 mm)	Yes. 3 T anatomy.	FSL (mcflirt), detrending, FSL FEAT, no slice-time correction	Yes. Fieldmap	Functional-to-Anatomical	Freesurfer	Equidistant (9)
2011	Koopmans et al.	V1	MPRAGE (0.75 mm)	ME-FLASH (0.75 mm)	Yes. 3 T anatomy.	FSL (bet), SPM5 realignment and coregistration, GLM, linear high-pass	No. Distortion-matched	Anatomical-to-Functional	Freesurfer	Equidistant (5)
2011	Zimmerman et al.	MT	MPRAGE + PD (1 mm)	3D-GRASE (0.8 mm)	Yes. Retinotopy.	BrainVoyager QX, 3D rigid, high-pass, temporal smoothing (low-pass), GLM	Not mentioned.	Functional-to-Anatomical	BrainVoyager QX, Upsampling 0.8 mm	Grid-sampling (2)
2011	Siero et al.	V1, M1	3D-EPI (0.6 mm)	2D-EPI (1.5 mm), 2D-EPI (1.5 mm + 1 mm slice gap)	No.	Motion, linear trend, RETROICOR, FSL FEAT with slice timing, high-pass, upsampled to 0.5 mm	Distortion-matched?	Anatomical-to-Functional	Upsampling 0.5 mm	Upsampled voxel-binning (3)
2012	Olman et al.	V1	MPRAGE (0.7 mm)	3D-GRASE (0.7x0.7x0.6 mm)	No.	AFNI (3dvolreg), mrTools	Mentioned. Iterative ROI registration.	Functional-to-Anatomical	SurfRelax	Voxel binning (5)
2013	DeMartino et al.	V1, MT	MPRAGE + PD (1 mm)	GE-EPI (0.8 mm, 1 mm), 3D-GRASE (0.8 mm)	Yes.	BrainVoyager QX, 3D rigid, high-pass, temporal smoothing (low-pass), GLM	Not mentioned.	Functional-to-Anatomical	BrainVoyager QX, Upsampling 0.8 mm	Grid-sampling (9)

Table 1.1 Overview of UHF laminar fMRI studies published till April 2019 (continued from previous page).

Year	Authors	Brain area	Anatomical	Functional	Multi-session	fMRI processing	Distortion-correction	Co-registration	Anatomical processing	Laminar analysis
2013	Siero et al.	V1	3D-EPI (0.5 mm)	GE-EPI (1 mm), SE-EPI (2 mm)	No.	Motion, linear trend, RETROICOR, FSL FEAT with slice timing, high-pass, upsampled to 0.5 mm	Distortion-matched?	Anatomical-to-Functional	Upsampling 0.5 mm	Upsampled voxel-binning (3)
2014	Huber et al.	V1	N/A	2D-VASO (1.3x1.3x1.5 mm)	No.	SPM8, FSL FEAT	No.	N/A	ODIN, GSL	Equidistant (2)
2015	Siero et al.	V1	3D-EPI (0.5 mm)	GE-EPI (1.3 mm)	No.	Motion, linear trend, RETROICOR, FSL FEAT with slice timing, high-pass, upsampled to 0.5 mm, temporal interpolation	Distortion-matched?	Functional-to-Anatomical	Upsampling 0.5 mm	Upsampled voxel-binning (3)
2015	DeMartino et al.	A1	Session1: MPRAGE + PD, GE-FLASH (0.6 mm) Session2: MPRAGE + PD (1 mm)	Session1: 2D-EPI (1.5 mm) Session2: GRASE (0.8 mm)	Yes.	BrainVoyager QX, Session1: 3D rigid, slice-time corrected, high-pass, temporal smoothing, coregistered to downsampled anatomy (0.8mm), downsampled to 1.6 mm isotropic, GLM. Session2: as Session1 coregistration to 1 mm anatomical and coregistered to 0.8mm Session1 anatomy, GLM.	Not mentioned.	Functional-to-Anatomical	BrainVoyager QX, Downsampling to 0.8 mm	Grid-sampling (3)

Year	Authors	Brain area	Anatomical	Functional	Multi-session	fMRI processing	Distortion-correction	Co-registration	Anatomical processing	Laminar analysis
2015	Muckli et al.	V1	Session1: MPRAGE + PD (1 mm) Session2: MPRAGE + PD, GE-FLASH (0.5 mm)	Session1: 2D-EPI, 3D-GRASE (0.8 mm) Session2: 2D-EPI (0.8 mm)	Yes.	BrainVoyager QX, 3D rigid, high-pass, slice-time correction (2D-EPI), temporal smoothing (low-pass), GLM	Yes. Topup.	Functional-to-Anatomical	BrainVoyager QX	Grid-sampling (6)
2015	Huber et al.	M1	N/A	2D-VASO (0.78x0.78x2 mm)	No.	SPM8, FSL FEAT	No.	N/A	ODIN, GSL	Equivolume (3)
2015	Kemper et al.	V1	MPRAGE + PD (0.6 mm)	2D-EPI (SE), 3D-GRASE (0.8 mm)	No	BrainVoyager QX, 3D rigid, high-pass, slice-time correction (2D-EPI), temporal smoothing (low-pass), GLM, coregistered and resampled using sinc interpolation.	No. Iterative ROI registration.	Functional-to-Anatomical	BrainVoyager QX	Grid-sampling (5)
2016	Huber et al.	M1, S1	N/A	2D-VASO (0.75x0.75x1.5 mm)	No.	SPM8, FSL FEAT	No.	N/A	ODIN, GSL	Equivolume (20)
2016	Kok et al.	V1	MP2RAGE (0.8 mm)	3D-EPI (0.8 mm)	No	SPM8, coregistration using BBR + recursive BBR	Yes. Non-linear.	Functional-to-Anatomical	Freesurfer	Equivolume, Spatial GLM

Table 1.1 Overview of UHF laminar fMRI studies published till April 2019 (continued from previous page).

Year	Authors	Brain area	Anatomical	Functional	Multi-session	fMRI processing	Distortion-correction	Co-registration	Anatomical processing	Laminar analysis
2016	Fracasso et al.	V1	MPRAGE (0.8 mm downsampled to 1 mm)	GE-EPI (2 mm), 3D-EPI (0.7 mm), GE-EPI (1.3 mm)	Yes	mrVista, Slicer, Motion-correction	No.	Anatomical(1 mm) -to-Functional	Manual	Equidistant (10)
2016	Ahveninen et al.	A1	MEMPRAGE (1 mm)	2D-EPI (1 mm)	No	AIR	Yes. Fieldmap.	Functional- to-Anatomical	Freesurfer	Equidistant (9)
2016	Nasr et al.	V2, V3	MPRAGE (1 mm, 3 T)	2D-EPI (1 mm, 3 mm)	Yes	Freesurfer, FS-FAST	No.	Functional- to-Anatomical	Freesurfer	Equidistant (3)
2016	Guidi et al.	M1	N/A	2D-VASO (1x1x1.5 mm)	No.	SPM8, FSL FEAT	No.	N/A	ODIN, GSL	Equidistant (20)
2017	Huber et al.	M1, S1	N/A	3D-VASO (0.75x0.75x1.5 mm)	No.	SPM8, FSL FEAT	No.	N/A	ODIN, GSL	Equivolume (20)
2018	Fracasso et al.	V1	Session1: MPRAGE + PD (0.5 mm)	Session2: 3D-EPI (0.55 mm)	Yes.	AFNI, coregistered to anatomy single step	No.	Functional- to-Anatomical	AFNI, ITKGray	Interpolated (100)
2018	Klein et al.	V1	MPRAGE (0.5 mm)	3D-EPI (0.7 mm)	No.	AFNI, Slicer, coregistered to anatomy single step	No.	Functional- to-Anatomical	MIPAV, TOADS- CRUISE	Equivolume (10)

Year	Authors	Brain area	Anatomical	Functional	Multi-session	fMRI processing	Distortion-correction	Co-registration	Anatomical processing	Laminar analysis
2018	Moerel et al.	A1	Session1: MPRAGE + PD, GE-FLASH (0.6 mm), Session4: TOF, SWI (0.4 mm, 1 subject)	2D-EPI, 3D-GRASE (0.8 mm)	Yes. Session1: Anatomy, Session2: 2D-EPI, Session3: 3D-GRASE.	BrainVoyager QX, 3D rigid, slice-time corrected (EPI), high-pass, temporal smoothing, coregistered to downsampled anatomy (0.8mm), ACPC oriented		Functional-to-Anatomical	BrainVoyager QX, Downsampling 0.8 mm	Grid-sampling (9)
2018	Kashyap et al.	V1	MP2RAGE + MI-EPI (0.7 mm)	3D-EPI (0.7 mm)	No.	SPM12, FSL FEAT	No & Yes (Topup).	Anatomical-to-Functional	SPM12, ITK-SNAP	Equivolume (10)
2018	Marquardt et al.	V1	MP2RAGE (0.7 mm)	3D-EPI (0.7 mm)	No.	SPM12, FSL FEAT	Yes. Topup.	Anatomical-to-Functional	FSL, ITK-SNAP, CBS-Tools	Equivolume (11)
2018	Kashyap et al.	V1	MP2RAGE + MI-EPI (0.7 mm), MP2RAGE (0.3 mm)	3D-EPI (0.7 mm), GE-FLASH (0.1x1.4x2.0 mm)	No.	ANTs, FSL FEAT	No.	Anatomical-to-Functional	ANTs, ITK-SNAP, CBS-Tools	Equivolume (30)
2019	Schneider et al.	MT	MPRAGE + PD (0.6 mm)	Sessions1-2: 2D-EPI (1.6 mm), Session3: 2D-EPI (0.8 mm)	Yes.	SPM12, FSL, BrainVoyager 20.0	Yes. Topup.	Anatomical-to-Functional	SPM12, ITK-SNAP, Segmentator, BrainVoyager	Grid-sampling (9)

Table 1.1 Overview of UHF laminar fMRI studies published till April 2019 (continued from previous page).

Year	Authors	Brain area	Anatomical	Functional	Multi-session	fMRI processing	Distortion-correction	Co-registration	Anatomical processing	Laminar analysis
2019	Kay et al.	V1	MPRAGE + SPACE (0.8 mm, 3 T)	2D-EPI (0.8 mm)	Yes. Session1: 3T Anatomy, Session2: 2D-EPI	FSL	Yes. Fieldmap.	Functional-to-Anatomical	Freesurfer	Equidistant (9)