Functions for creating mrC inverse data

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| Main functions | Children (called functions) | Parents (calling functions) |
| **Function Where** | **Function Where** |
| SystemSetup  checks if folder preferences are set, if not, set them |  | * mrC.PrepareProject Current dir * mrC.MakeForwards Current dir * mrC.MakeInverses Current dir * mrC.RoiCorrelation Current dir |
| CreateProject  Generates sensor or source space project for use with mrC.GUI (formerly mrCurrent.m) and multiple other mrC functions. | * ParseArgs mrC\Tools * Subfiles mrC \Tools |  |
| PrepareProject  Prepares source space project that can be used with mrC.GUI and multiple other mrC functions. This function merges prepareProjectForMne and preparePowerDivaForMne. | * mne\_read\_bem\_surfaces mrC\external\mne\_matlab * mrC.CoregisterElectrodes current dir * mrC.MakeFIFFData current dir * mrC.SystemSetup current dir * subfiles mrC\Tools * subfolders mrC\Tools |  |
| MakeForwards  Prepares forwards for a source space project that can be used with mrC.GUI and multiple other mrC functions. | * mrC.SystemSetup current dir * subfiles mrC\Tools * subfolders mrC\Tools |  |
| MakeInverses  Generates inverse solutions. | * define\_activated\_source\_space subfunction * geometryChunk ? * getRoisByType ? * get\_gcv\_params subfunction * get\_general\_params subfunction * mne\_read\_forward\_solution mrC\external\mne\_matlab * mne\_read\_source\_spaces mrC\external\mne\_matlab * mrC.AddCorr current dir * mrC.MakeForwardMatrix current dir * mrC.MakeInvGCV current dir * mrC.MakeInvJma current dir * mrC.MakeInvMne current dir * mrC.SystemSetup current dir * mrC.WriteInverse current dir * split\_string mrC\external\mne\_matlab * subfiles mrC\Tools * subfolders mrC\Tools |  |
| SourceBrain  Convert EEG data to source-localized whole-brain data | * ParseArgs mrC\tools * findConnectionMatrix vistasoft * makeDefaultCortexMorphMap mrC\tools\svndl\_codes * mrC\_readEMSEinvFile private * readDefaultCortex mrC\tools\svndl\_codes * subfiles mrC\Tools * subfolders mrC\Tools | * mrC.RoiDemo Current dir |
| SourceRoi  Convert EEG data to source-localized ROI data | * ParseArgs mrC\tools * mrC.ChunkFromMesh current dir * mrC\_readEMSEinvFile private * subfiles mrC\Tools * subfolders mrC\Tools |  |
| WriteNiml | * ParseArgs mrC\tools * afni\_niml\_writesimple mrC\tools\afni * nearpoints mrC\external\vistasoft * surfing\_read\_surf surfing |  |
| Other functions |  |  |
| CoregisterElectrodes  Performs Electrode coregistration | * alignFiducials subfunction * convertElp subfunction * isElpFileGood subfunction * (mrC.EGInetFaces current dir * mrC.FindMeshSelfIntersections current dir * mrC.FlattenZ current dir * mrC\_readELPfile private) * mne\_read\_bem\_surfaces mrC\external\mne\_matlab * mrC.FitPointsToScalp current dir * readeetraklocs mrC\external\eeglab * readelp mrC\external\eeglab * readhsp ? * subfiles mrC\Tools | * mrC.PrepareProject Current dir |
| MakeFIFFData | * fiff\_define\_constants mrC\external\mne\_matlab * fiff\_write\_evoked mrC\external\mne\_matlab * mne\_write\_cov\_file mrC\external\mne\_matlab | * mrC.PrepareProject Current dir |
| AddCorr  Add ROI correlations to forward or inverse  (ROI correlations are created with mrC.RoiCorrelation function) |  | * mrC.MakeInverses Current dir |
| MakeForwardMatrix  gets the structure returned by mne\_read\_forward\_solution and the structure returned by mne\_read\_source\_spaces and Createsa a forward matrix from MNE FILES | * fiff\_define\_constants mrC\external\mne\_matlab | * mrC.MakeInverses Current dir |
| MakeInvGCV | * csvd mrC\tools\svndl\_code * gcv mrC\tools\svndl\_code | * mrC.MakeInverses Current dir |
| MakeInvJma | * fiff\_define\_constants mrC\external\mne\_matlab * mne\_read\_forward\_solution mrC\external\mne\_matlab | * mrC.MakeInverses Current dir |
| MakeInvMne | * mne\_prepare\_inverse\_operator mrC\external\mne\_matlab * mne\_read\_inverse\_operator mrC\external\mne\_matlab | * mrC.MakeInverses Current dir |
| WriteInverse  Writes an inverse file in EMSE (.elp) format |  | * mrC.MakeInverses Current dir |
| FitPointsToScalp  Finds a rigid transformation the best fits 2 sets of points | * mrC.RigidRotate Current dir * nearpoints mrC\external\vistasoft * rotcostfunclsq subfunction | * mrC.CoregisterElectrodes Current dir |
| EGInetFaces  Faces matrix for 128-electrode EGI net  (EGInetFaces32  Faces matrix for 32-electrode EGI net  EGInetFaces256  Faces matrix for 256-electrode EGI net) |  | * mrC.CoregisterElectrodes Current dir * mrC.plotOnEgi Current dir |
| FindMeshSelfIntersections  ? |  | * mrC.CoregisterElectrodes Current dir |
| FlattenZ  Flattens a set of 3-D Cartesian coords in the 3rd dimension | * sphereFit subfunction * (fminsearch mrC\external\eeglab * objFun subfunction (nested)) | * mrC.CoregisterElectrodes Current dir |
| RigidRotate  performs a rigid body transformation | * rotate subfunction | * mrC.RigidRotate Current dir * mrC.FirPointsToScalp Current dir |
| RoiCorrelation  Generate roi correlation matrices used for doing source localization with a functional area constrained estimator (FACE). | * mrC.MeshDist current dir * mrC.SystemSetup current dir * split\_string mrC\tools\afni | Should be called before mrC.MakeInverses, if not called before. |
| MeshDist  Calculates (Geodesic) distance using cortical mesh | * ParseArgs mrC\Tools * mrC.SystemSetup current dir * split\_string mrC\tools\afni * subfiles mrC\Tools * subfolders mrC\Tools * tess\_vertices\_connectivity | * mrC.RoiCorrelation Current dir |

Visualization functions

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| Main functions | Children (called functions) | Parents (calling functions) |
| **Function Where** | **Function Where** |
| plotOnEgi  This function will plot data on the standardized EGI mesh with the arizona colormap | * jmaColors mrC\tools * mrC.EGInetFaces current dir * mrC.EGInetFaces256 current dir * mrC.EGInetFaces32 current dir | * mrC.RoiDemo current dir |
| CortexPlot  ?? | * jmaColors mrC\tools |  |

ROI simulation functions

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| Main functions | Children (called functions) | Parents (calling functions) |
| **Function Where** | **Function Where** |
| RoiDemo  Simulate ROI activity | * ParseArgs mrC\tools * export\_fig mrC\tools\plotting * makeForwardMatrix current folder * mne\_read\_forward\_solution mrC\external\mne\_matlab * mrC.SeedMtx current dir * mrC.SourceBrain current dir * mrC.WriteNiml current dir * mrC.plotOnEgi current dir * mrC\_readEMSEinvFile private * readDefaultSourceSpace mrC\tools\svndl\_codes * subfiles mrC\Tools * subfolders mrC\Tools |  |
| SeedMtx  Generate Crosstalk matrix from mrCurrent folder | * mrC.ChunkFromMesh current dir | * mrc.RoiDemo |
| ChunkFromMesh  The chunker matrix maps the full (~128 x nTotalVert) forward/inverse matrix onto onto a chunked 128xnMeshRois | * subfiles mrC\Tools | * mrC.SeedMtx * mrC.SourceRoi |
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Other functions

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| Main functions | Children (called functions) | Parents (calling functions) |
| **Function Where** | **Function Where** |
| CopyROIs  Copy ROIs to the mrCurrent folder | * ParseArgs mrC\tools * subfiles mrC\Tools * subfolders mrC\Tools |  |
| CrossTalk  Generate Crosstalk matrix from mrCurrent folder | * ParseArgs mrC\tools * subfiles mrC\Tools * subfolders mrC\Tools * …. |  |
| DefaultCortexMorphMap  This function makes a morphing matrix that maps values from 1 subject to another  % Freesurfer based MNE morphing matrices must have been computed already | * mne\_read\_morph\_map * mne\_read\_source\_spaces * nearpoints |  |
| ExportAnalysis  ? |  |  |
| FrequencyFilter  ? |  |  |
| NodeDemo  ? | * …. |  |
| RoiFromSuma  Convert ROIs from SUMA to mrCurrent | * …. |  |
| SNR  ? | * … |  |
| Normalize |  |  |
| TextImport |  |  |
| GUI | * THE SUBFUNCTIONS ARE NOT EXPLAINED HERE |  |