

a toolbox for the automated processing of MR images

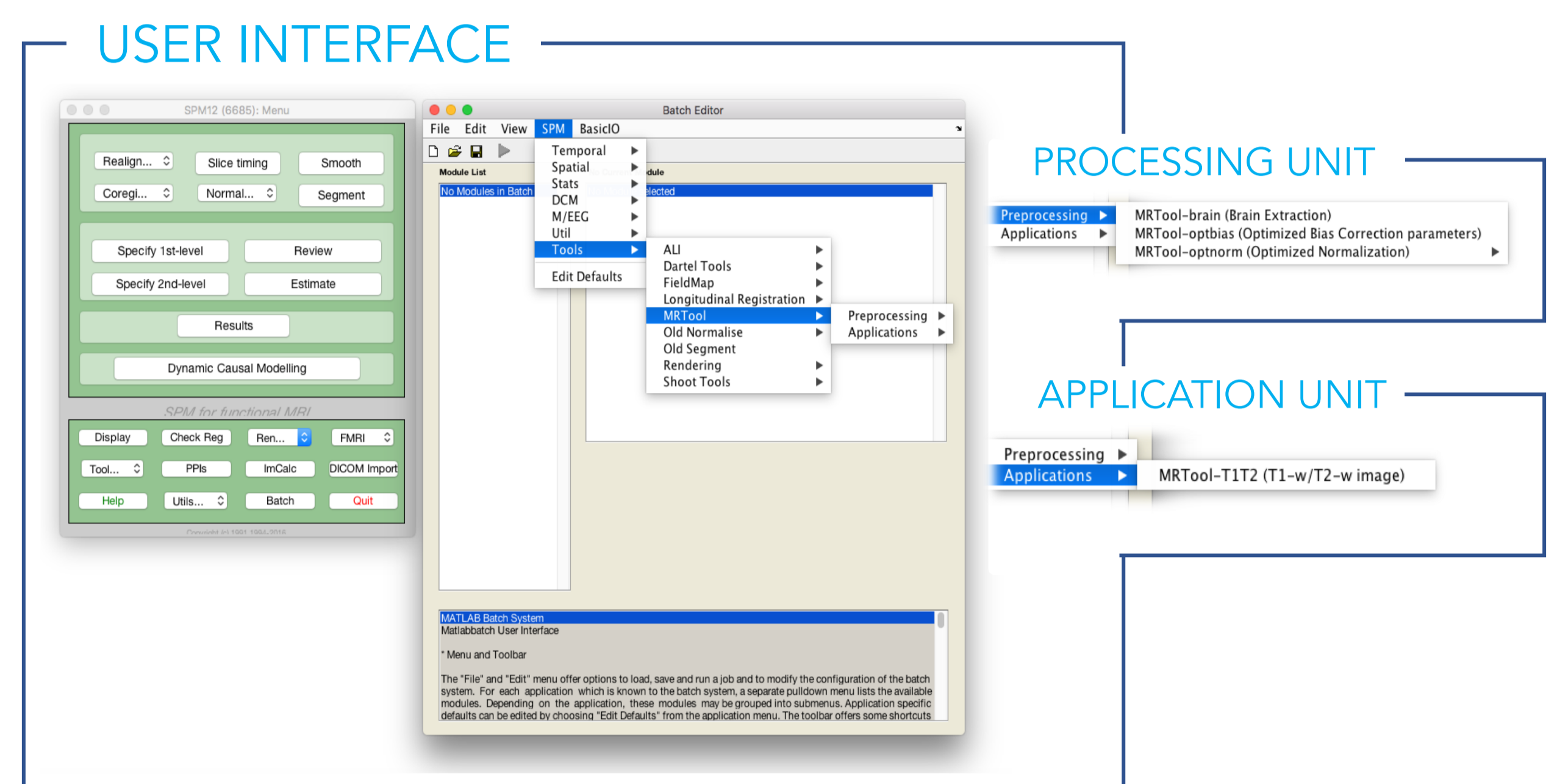
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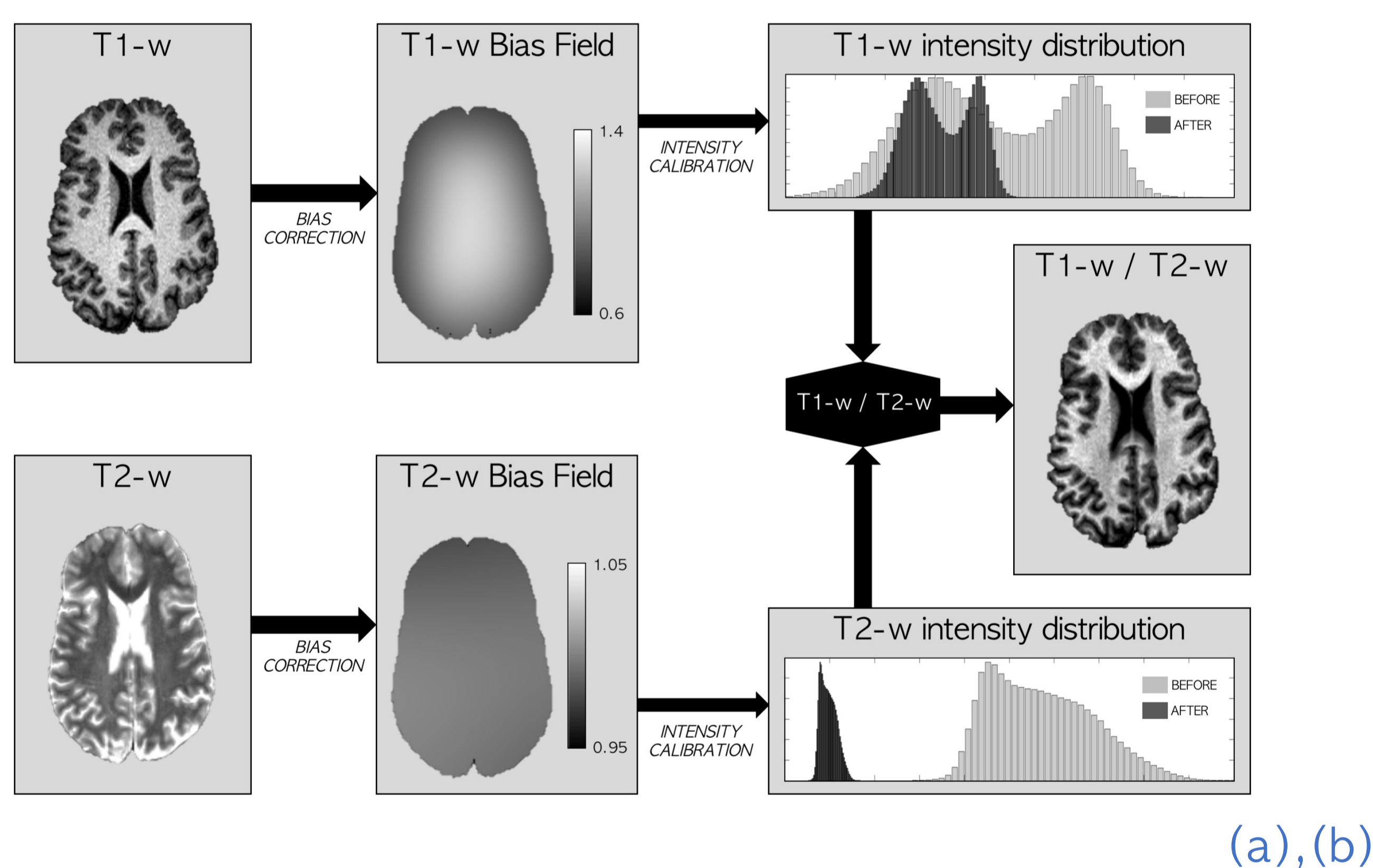
TOOLBOX OVERVIEW

In view of the increasing availability of MR imaging data for clinical investigations, we introduce MRTool, a comprehensive collection of analysis tools in the form of a SPM12 toolbox.

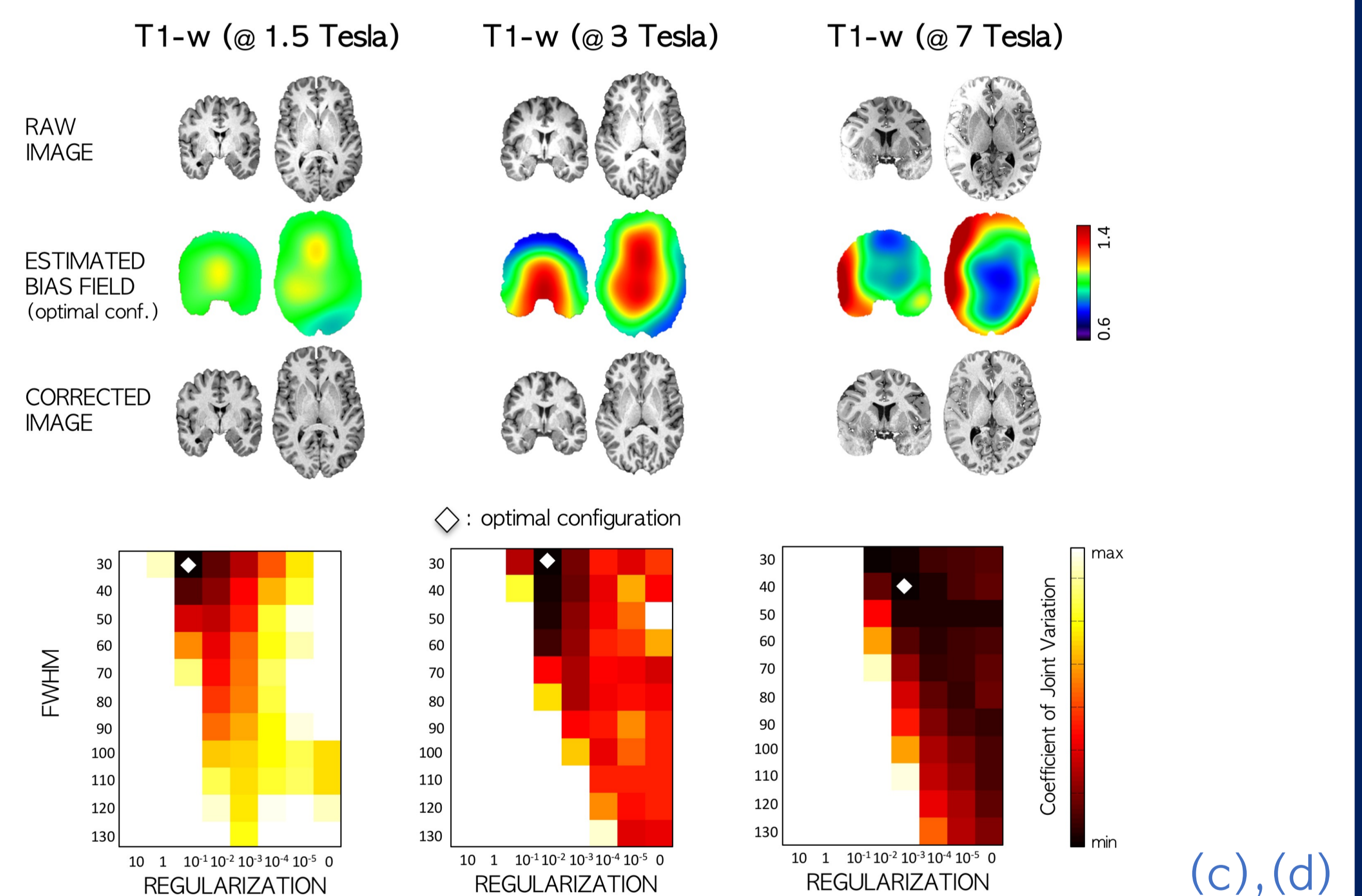
- **MRTool-T1T2**: generation of a multimodal T1w/T2w ratio image from the intensity calibrated T1w and T2w images (1)
- **MRTool-optbias**: definition of the optimal set of input parameters (regularization and FWHM) required during the bias correction of structural MR images in SPM (2)
- **MRTool-brain**: automated generation of skull-stripped images
- **MRTool-optnorm**: enhanced spatial registration and segmentation of brains characterized by a marked ventricular enlargement and advanced atrophy (3)



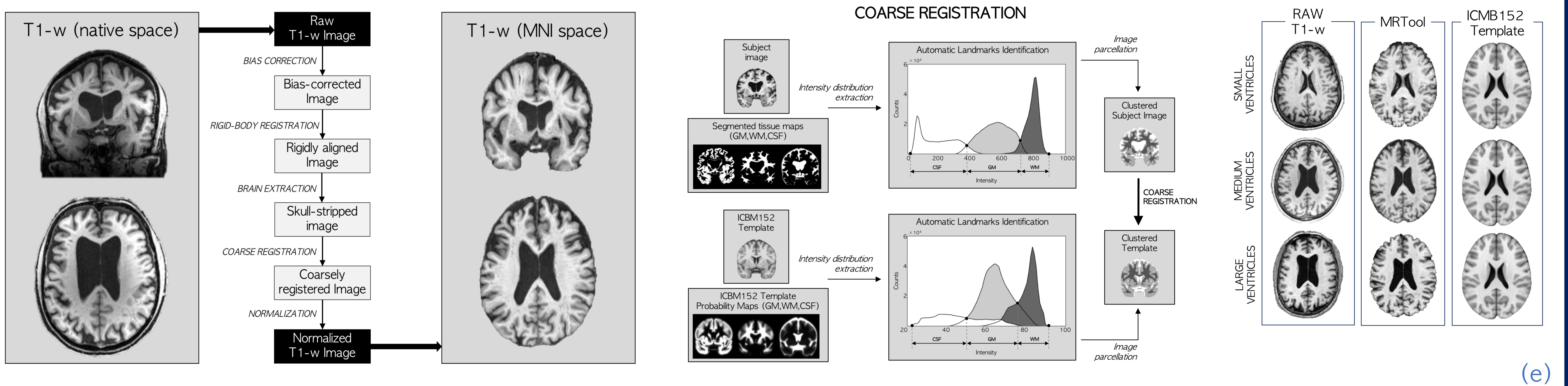
MRTool-T1T2 (1)



MRTool-optbias (2)



MRTool-optnorm (3)



(a) Ganzetti et al. 2014 - Whole brain myelin mapping using T1-and T2-weighted MR imaging data. *Frontiers in Human Neuroscience*

(b) Ganzetti et al. 2015 - Mapping pathological changes in brain structure by combining T1-and T2-weighted MR imaging data. *Neuroradiology*

(c) Ganzetti et al. 2016 - Intensity inhomogeneity correction of structural MR images: A data-driven approach to define input algorithm parameters. *Frontiers in Neuroinformatics*

(d) Ganzetti et al. 2016 - Quantitative evaluation of intensity inhomogeneity correction methods for structural MR brain images. *Neuroinformatics*

(e) Ganzetti et al. 2018 - A Spatial Registration Toolbox for Structural MR Imaging of the Aging Brain. *Neuroinformatics*