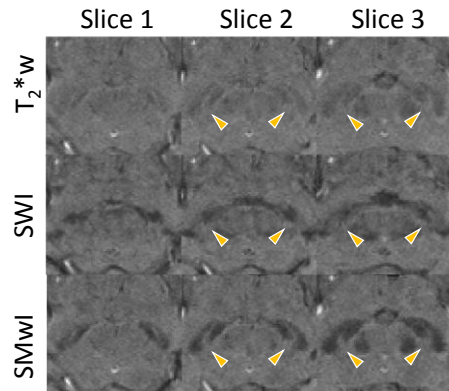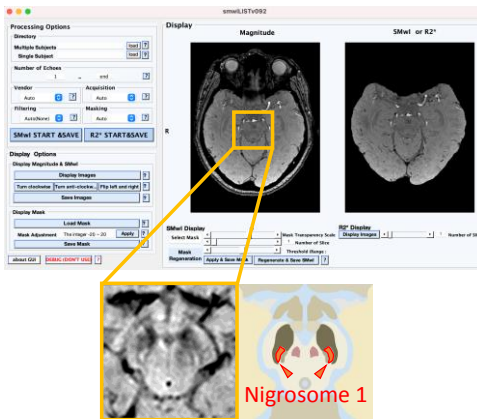# Susceptibility Map-weighted Imaging (SMwI)

Authors: Hyeong-Geol Shin @ Seoul National University

Nigrosome 1

CNR enhanced by × 1.4

Link of software: http://list.snu.ac.kr/index.php/software/
Paper: Yoonho Nam, JMRI, 2017

Here we introduce two methods from Seoul National University. The first one is Susceptibility Map-Weighted Imaging or SMWI that combines the multi-echo magnitude images with a QSM generated mask. This method is utilized to visualize so-called swallow-tail or nigrosome 1 in substantia nigra for Parkinson's disease. As compared to a T2* weighted image or an SWI image, an SMWI image provides 1.4 times higher CNR, enabling reliable detection of the swallow-tail structure at 3T.

QSMnet, QSMnet[+] and multiorientation QSM data
Authors: Woojin Jung @ Seoul National University
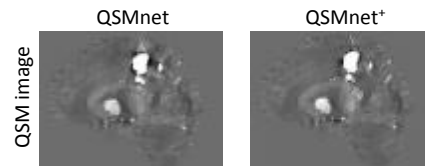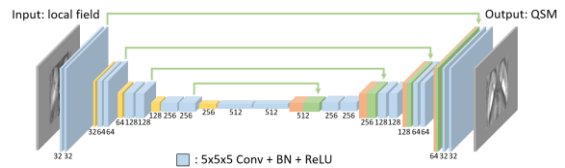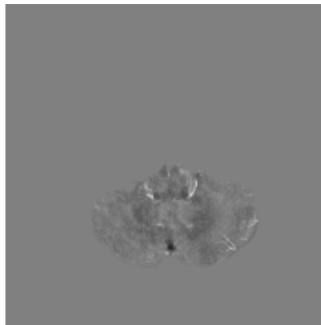
The next tool is QSMnet that performs dipole deconvolution using a deep neural network. The network provide a COSMOS quality susceptility map for a single head orientation data input. QSMnet+ is a generalized version of QSMnet for larger susceptiblity ranges. Both pretrained networks and multiorientation data for network training are available for sharing. Thank you!