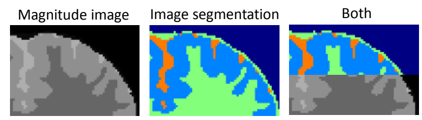
# MRI Conductivity (UCL)

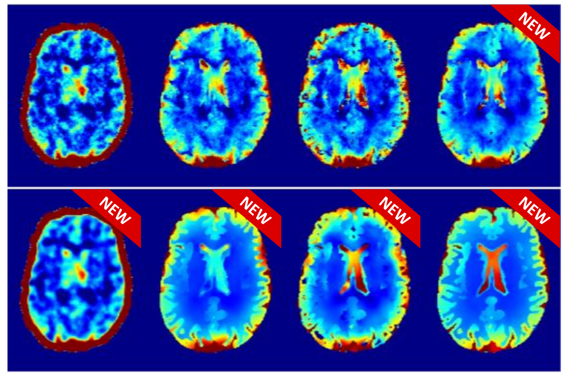
**Anita Karsa and Karin Shmueli**




Phase-based EPT:

$$\sigma = \frac{1}{\mu_0 \omega} \nabla^2 \varphi_0$$

$$\sigma = \frac{1}{\mu_0 \omega} \oint \nabla \varphi_0 \, d\boldsymbol{s}$$




**Abstract:**
Karsa et al. "New Approaches for Simultaneous Noise Suppression and Edge Preservation in Quantitative Conductivity Mapping From Low-SNR Data." Proceedings of the 29th Annual Meeting of ISMRM. p.3774. 2021.

The MRI conductivity mapping tool developed at UCL contains MATLAB implementations of all methods presented in the abstract below. These methods are based on two different formulations of the phase-based Helmholtz equation and include edge preservation based on the magnitude image and/or the image segmentation.

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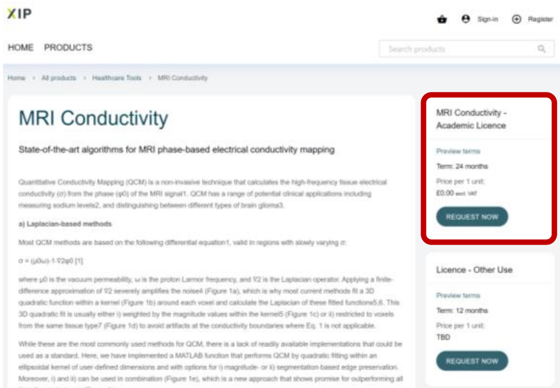
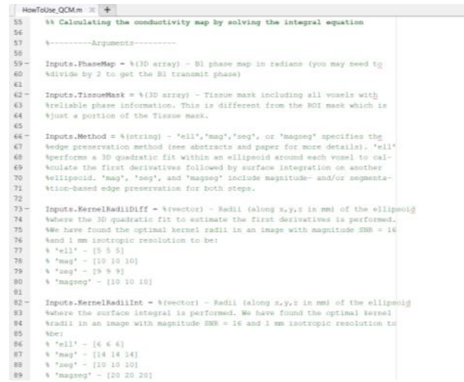



**HowToUse_QCM.m**




**Links:**
https://xip.uclb.com/product/MRI_conductivity
(https://xip.uclb.com/i/software/MRI_conductivity.html also redirects here)

**Email:** anita.karsa.14@ucl.ac.uk or segueUCL@gmail.com

The MATLAB functions are licenced for free for academic use and can be downloaded from the UCL XIP website. The HowToUse_QCM.m file contains a detailed list of all the necessary inputs and their descriptions. If you have any questions, please don‘t hesitate to contact the authors via one of the email addresses below.