

# Motion Correction in MRI



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**ORGANIZING COMMITTEE CHAIR:**

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**COMMITTEE MEMBERS:**

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**TARGET AUDIENCE:** This workshop is designed for: New MR scientists who would like to get a hands-on experience and a good introduction to various motion correction techniques; Experienced MR scientists currently developing motion correction techniques and interested in alternative solutions; and Clinicians interested in applying the latest correction methods to solve their motion problems.

## OVERVIEW

The Motion Correction in MRI workshop will follow up on the highly successful “Current Concepts of Motion Correction for MRI & MRS” workshop, held in February 2010, in Kitzbühel, Austria.

Motion has been a problem for essentially all types of MR acquisition since the beginning of clinical MRI. Many motion correction and prevention techniques have been proposed over the years, ranging from rigid-body or elastic retrospective correction, gated acquisition, to various forms of prospective motion correction using either the MR signal itself or by tracking using external systems, such as cameras.

This workshop will have very didactic and hands-on presentations from the keynote speakers. As an example of a hands-on session, we will demonstrate concise Matlab scripts for performing operations such as sum-of-squares and mutual information based image realignment and show & explain this in detail. Attendees can follow along with these examples on their laptops if they wish (we will make the necessary data available on the workshop USB).

In addition, we note that despite the increased focus on motion correction over the last few years, only a very small subset (incl. e.g. PROPELLER) of these are used in the average hospital or have been commercially implemented. Therefore, the gap between research and commercial implementation will also be a part of the discussion on this workshop.

## EDUCATIONAL OBJECTIVES

Upon completion of this activity, participants will be able to:

- Recognize state-of-the art motion robust acquisition methods and assess if they can be implemented in their practice;
- Assess the strength and limitations of various prospective and retrospective motion correction methods;
- Implement a simple retrospective motion correction program based on the examples given in the workshop;
- Relate their own research on motion correction with alternative methods presented and use this knowledge to prioritize their next steps in the field;
- Recognize differences in motion artifacts for various image acquisition methods; and
- Distinguish between different methods for motion correction recently made available and understand under what circumstances they may be used.

**FOR MORE INFORMATION INCLUDING  
HOUSING & REGISTRATION,  
PLEASE VISIT:**

<http://www.ismrm.org/workshops/Motion14/>

**OR CALL: +1 510 841 1899**