PBM 229: Advanced Topics in Magnetic Resonance Imaging

Spring 2018: 4 Units
Room: 300 Medical Plaza, B500
Lectures: Tue/Thu 10:00 AM – 11:50 AM

Instructors: Holden Wu, PhD (holdenwu@mednet.ucla.edu)
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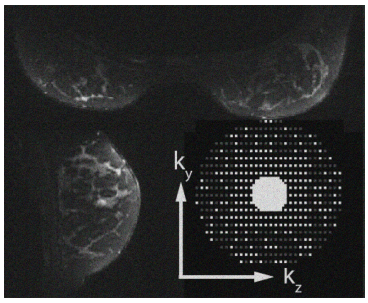
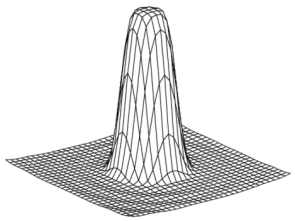
Course Description: This course will explore recent MRI developments that 1) have had high impact on the field, 2) involve novel pulse sequence design or image reconstruction, and/or 3) enable imaging of anatomy or function in a way that surpasses what is currently possible with any other modality. Simulations and programming exercises in Matlab will provide hands-on experience for students. Students will propose and carry out a final project along current directions of advanced MRI research.

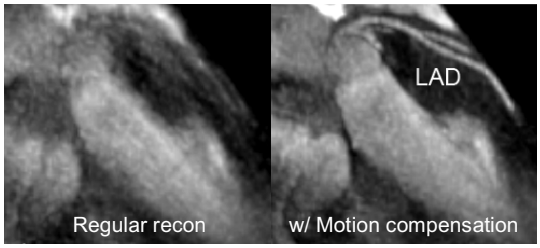
Course Topics:
- Advanced Pulse Sequences
- RF Pulse Design
- Fast Imaging Techniques (non-Cartesian sampling, etc.)
- Water-Fat Imaging
- Advanced Image Reconstruction (parallel imaging, compressed sensing, etc.)
- Understanding / avoiding artifacts

Prerequisites: This course is a follow-up to PBM 219 (Principles and Applications of MRI) and is meant for students interested in pursuing research related to the development or translation of new MRI techniques.

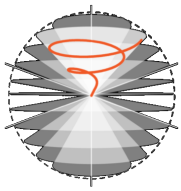
Please email instructors if interested in this course.







2D Spiral



3D Cones