MR System Overview (What is Required to Accomplish MRI?)

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Although MRI scanner is now widely used and indispensable for both clinical scene and research field, its inside is filled with black-boxes for end users. Many researchers who know the history of MRI developments from the dawn period have retired or are retiring, and younger MRI users study it with only literatures.

This is an unfortunate situation especially for researchers because they have to use the tool without knowing exactly what is happening to its inside. In order to interpret data sets obtained with their scanner, sometime to know the behavior of the scanner is very important. Therefore, MR physicists should keep interests in MR system and update the knowledge.

This lecture course on MR system is aimed to introduce the black boxes in detail and to update the knowledge by learning state-of-the-art techniques. And this lecture, an overview of this course, is to introduce each part of MR system briefly to help audiences to understand the following lectures.

Target audiences are not only physicists but also all people who want to know about MR system. No special knowledges and experiences on advanced physics or engineering are necessary. Just reading the first or second chapters of an typical MRI textbook is recommended to know very basic NMR principle and imaging technique in MRI.