

MRI fundamentals and radio frequency coils for ultra-high field MRI



Currently, the majority of clinical magnetic resonance imaging (MRI) systems operate at moderate external field strengths of 1.5 Tesla and 3 Tesla. For small and complicated organs imaging, resolutions need to be significantly increased in order to visualize the organs in details. Since the sensitivity increases with the field strength, field strengths of 7 Tesla and 9.4 Tesla are therefore standard in the preclinical field. In this talk first we explain how MRI systems work in general and discuss fundamental apparatuses of the system especially radio frequency coils. Then, we analyze some difficulties appearing implementation RF coils in UHF MRI.

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