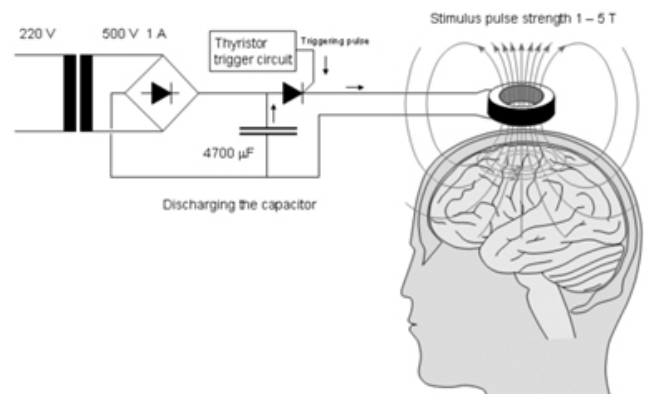


## 09BM163 Noninvasive System of Transcranial Magnetic Stimulation Focused and Deep

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The Transcranial Magnetic Stimulation (TMS) is a non-invasive stimulation process which induces an electric field in the brain, to excite or inhibit groups of neurons. However, the current technology reaches only the motor cortex, about 1.5 cm deep, greatly restricting the areas of stimulation. This paper proposes new geometries of TMS to reach further internal brain structures, such as the basal ganglia, with improved focality.



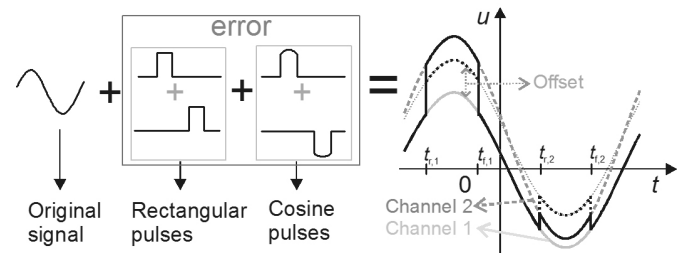
Picture representing a TMS system.

## 10EM046 Model of Errors Caused by Discrepancies of Input Channels in Multiresolution ADC

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Multiresolution analog-to-digital converter (MRADC) is obviously used in Time domain electromagnetic interference (TDEMI) measuring system for very fast signal sampling with sufficient dynamic range. TDEMI system offers quick investigation of EMI spectrum, which is necessary for mass production EMI testing. Properties of resulting spectrum influenced by imperfections in MRADC are analyzed in the paper. Errors being analyzed are incurred by circuits used in parallel input channels typical for MRADC. Extended mathematical error model has been created covering both slope and offset discrepancies of input channels.

Keywords- multiresolution quantization, time domain EMI measurement, offset and slope errors, spectrum measurement.



**Modelling of errors of MRADC system:**  
**Sketch of COS model formation based on time domain pulses**