Abstract Submitted
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Triple Halo Coil: Development and Comparison with Other TMS Coils[1] PRIYAM RASTOGI, RAVI HADIMANI, DAVID JILES, Electrical and Computer Engineering, Iowa State University — Transcranial Magnetic Stimulation (TMS) is a non-invasive stimulation technique that can be used for the treatment of various neurological disorders such as Parkinson's Disease, PTSD, TBI and anxiety by regulating synaptic activity. TMS is FDA approved for the treatment of major depressive disorder. There is a critical need to develop deep TMS coils that can stimulate deeper regions of the brain without excessively stimulating the cortex in order to provide an alternative to surgical methods. We have developed a novel multi-coil configuration called "Triple Halo Coil" (THC) that can stimulate deep brain regions. Investigation of induced electric and magnetic field in these regions have been achieved by computer modelling. Comparison of the results due to THC configuration have been conducted with other TMS coils such as "Halo Coil", circular coil and "Figure of Eight" coil. There was an improvement of more than 15 times in the strength of magnetic field, induced by THC configuration at 10 cm below the vertex of the head when compared with the "Figure of Eight" coil alone.

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