

## **360° Rotating Field Transcranial Magnetic Stimulation (rfTMS)**

(No. T4-2472)

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## **Overview**

Transcranial magnetic stimulation (TMS) is an FDA-approved, non-invasive treatment for depression, OCD, and migraines. However, its efficacy is limited by the fixed directional orientation of standard TMS, which only stimulates axons aligned with the field. This invention introduces a full 360° electronically rotating field TMS (rfTMS), delivering effective stimulation across all orientations and significantly improving therapeutic outcomes in treatment-resistant depression.

## **Applications**

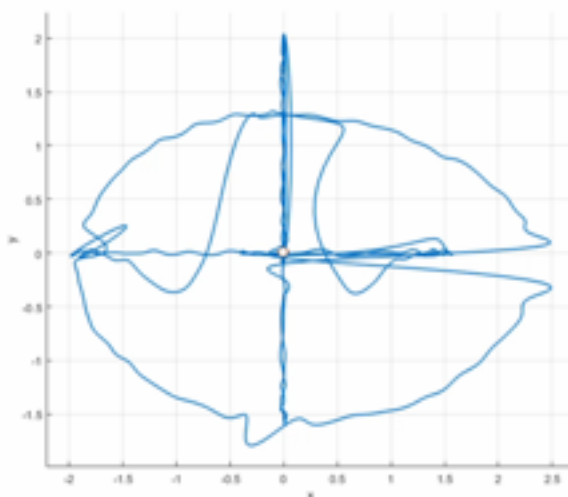
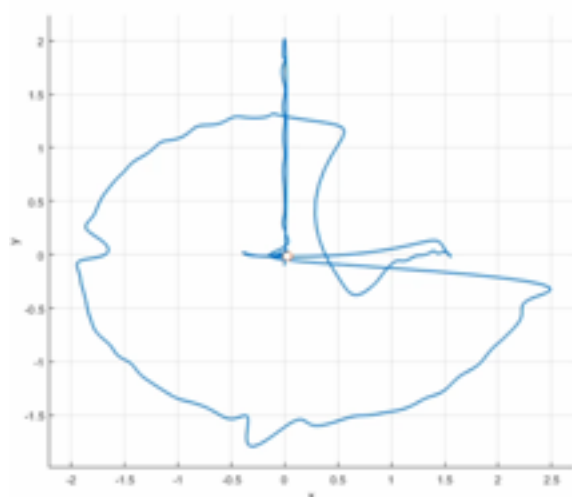
- Treatment-resistant depression: enhanced efficacy in patients unresponsive to drug therapy.
- Other psychiatric and neurological disorders: OCD, migraines, and future extensions to additional TMS-approved indications.
- Research tool: improved stimulation in brain regions lacking preferred axonal orientation.

## **Differentiation**

- Full 360° coverage: stimulation of all neuronal orientations
- Clinically validated concept: 270° rotation improved resistant depression
- Expandable platform: compatible with existing TMS systems

270°

360°



The magnetic field created by the 270 (left) and the 360 (right) degree electrically rotating Transcranial Magnetic Stimulation. The 270 degree rotation occurs within under a millisecond, while the 360 degree rotation occurs under 100 milliseconds. Data is measured using a small pick-up coil placed near the center of the specially constructed Cloverleaf Magnetic Coil.