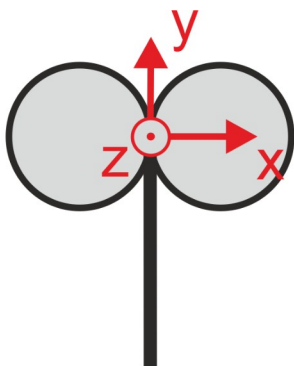


Details about the coil models can be found in:

Drakaki M, Mathiesen C, Siebner HR, Madsen K, Thielscher A (2022) Database of 25 validated coil models for electric field simulations for TMS. Brain Stimulation (doi.org/10.1016/j.brs.2022.04.017). In particular, Table 2 of the paper lists the dI/dt_{\max} for the coils when connected to the most commonly used biphasic stimulators. These values can be scaled by the stimulation intensity (in % of maximal stimulator output) to get the dI/dt values for the SimNIBS simulations.

Current directions:

We tried our best to get the current directions correct. The chosen directions relate to the start of the pulse at $t=0$. They seem consistent with the arrows on the casings that indicate the current directions in the coil windings (exceptions see below).

SimNIBS coil coordinate system:

view on the “active” side of the coil attached to the head



The z-axis points into the head, the y-axis points away from the coil handle.

Further notes:

- MagVenture MC-125 old vs new
There is a change in the coil litz cable. The old coil has a serial number SN:1015, the new coil has a serial number SN: 1508
- MagVenture MCF-B65 old vs new
There is a change in the coil litz cable. The old coil has a serial number SN:227, the new coil has a serial number SN: 2434
- MagVenture MST-Twin
The model is for one half of the actual coil
- Mag&More: Current directions were determined when the “Polarity” light on the stimulator was on.
- MagVenture round coils: Current directions are for the coil orientation for which the “A” is visible. Directions are consistent with the arrows on the casing EXCEPT for the MCF-75.
- Orientations for coils with upward-pointing handles:
 - Magstim DCC, Deymed 120BFV: For the chosen orientation, the buttons in the handles point in positive y-direction
 - Mag&More PMD25: The handle is displaced in negative y-direction
 - Mag&More PMD45: The arrows on the casing are on the positive y-side