

It is assumed that all modeled domains have homogeneous material properties. The applied quantities of average electrical conductivity and relative dielectric permittivity for different tissues are shown in Table 1.

Table 1: Average conductivity and relative permittivity for various tissues [9]

Tissue	$\sigma$	$\varepsilon_r^*$
	(S/m)	( $\varepsilon_r = \varepsilon_r^* \times c_\varepsilon$ )
Scalp skin	0.465	1.2
Skull bone	0.010	0.8
CSF	1.654	0.6
Grey matter	0.274	1.2
White matter	0.126	1.2

The scaling parameter  $c_\varepsilon$  in the definition of relative electrical permittivity (Table 1) is equal to  $10^2$ ,  $10^4$ , and  $10^7$ , respectively [9].

In the air region, the electrical conductivity is equal to  $\sigma_{\text{air}} = 0$  and the relative dielectric permittivity is  $\varepsilon_r = 1$ .

A cross-section ( $x > 0$ ) of the 3D mesh used in TMS simulations is shown in Fig. 7.

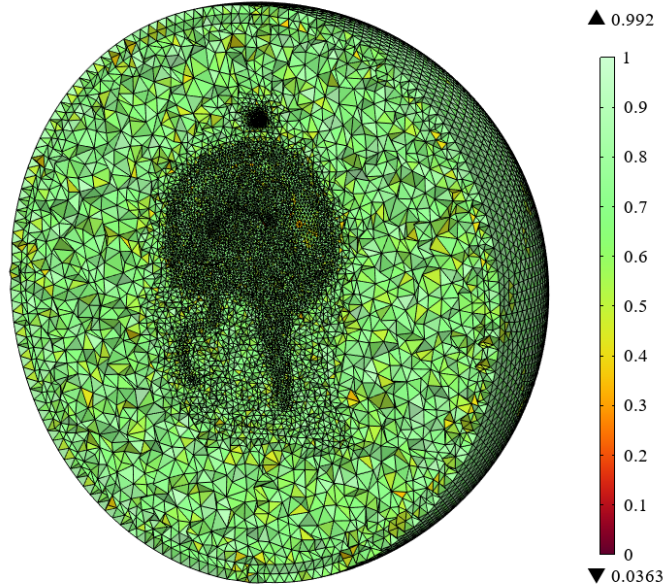


Fig. 7: Cross-section view of the 3D mesh used in TMS simulations (for  $x > 0$ ). Complete mesh consists of 1549185 domain elements (tetrahedral elements of the second order), 131156 boundary elements. The color range depicts a measure of the quality of the mesh elements represented by the element skewness.