

Electromagnetic Fields at the Surface of Human-Body Cylinders - DTU Orbit (08/11/2017)

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The electromagnetic fields around an infinitely long cylinder with different material parameters are analyzed. The cylinder is modeled as muscle, skin, fat, and perfect electric conductor respectively. The cylinder is illuminated by a plane wave incident from different angles and with both transverse electric and transverse magnetic polarization. The results show that the material assumption when modeling the human body as a homogeneous material is very important. Furthermore, it is shown that one assumption might lead to higher fields for a specific polarization, angle of incidence and frequency, but that does not translate to similar relative performance at another polarization, angle of incidence, and frequency.

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