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EDDY CURRENTS IN A LOSSY CONDUCTING PLATE IN HARMONIC STEADY-STATE

BY

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Abstract. Considering a lossy conducting plate having a rectangular section, situated in a harmonic and homogeneous magnetic field, in harmonic steady-state, having the intensity vector parallel to the plate faces, the complex vectors $\underline{\mathbf{J}}_l(x)$, $\underline{\mathbf{E}}_{intl}(x)$, $\underline{\mathbf{H}}_{intl}(x)$ and $\underline{\mathbf{S}}_l(d/2)$ are determined, where d is the plate's width and $x \in [0, d/2]$. The expressions of the active and reactive powers which penetrate in the plate through the unity area of here surface are determined too. The same elements are determined in particular cases when the frequency is either low or high.

Key words: Eddy current; lossy conducting plate; harmonic steady-state.