TITLE:

Solving problems from the domain of electrical circuits

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ABSTRACT:

The subject of this thesis is solving problem from the domain of electrical circuits. Because the theory of electrical circuits itself is a broad subject, this thesis is going to focus only on a small subcategory, mainly electrical circuits, where the power sources supply the current and voltage either at a constant direct flow or with a harmonic waveform. Furthermore these circuits will be discussed only in their stabilized state. This may seem as a gross simplification of the subject, but majority of electronic devices works with direct or harmonic power supply.

The goal set for this thesis is to define relationships for the design of selected electrical circuits derived from the much broader theory of electromagnetic field. Various methodologies and procedures for the design of electronic circuits exist, that are based on these relationships. These methods will be illustrated on solved examples. Aside from the physical characterization of circuits a mathematical apparatus will be needed to solve equations and system of equations, derived from the physical relationships.