Analysis of the dual-excited synchronous machine

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Abstract

This paper presents a generalized analysis for the dual-excited synchronous machine, in which, on the contrary of previous work, the two field windings are not necessary located on the rotor axes, and may not have the same number of turns or the same inclination angle to the physical axis of the pole structure. In deriving the general equation of the machine, no approximations are introduced other than those required for deriving Park's transformation, and so the analysis provides a more exact representation for this machine...