

Five Phase Permanent Magnet Synchronous Generator Distributed Winding to Fractional Slot Concentrated Winding

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Abstract – A comparative study of a 5 phase PMSG with classical distributed winding and one with fractional slot winding is presented in this paper. Finite element analysis has been used for both models in order to estimate their performances. Two initial conditions have been considered: keeping the same volume of permanent magnet and the same total slots section for stator winding. The main goal was to design an equivalent machine with higher power density at the same power and operation speed.

Keywords — permanent magnet, cogging torque, synchronous generator, fractional slots winding, FEM simulation.

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