

An Additional Short-Circuited Stator Winding in Flux-Barriers to Improve the Machine Performance

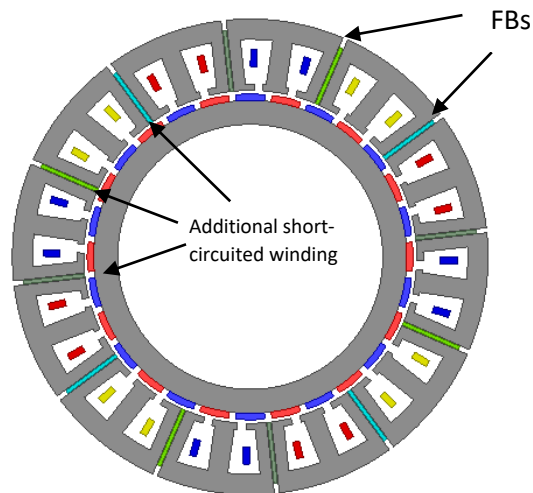
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Abstract - In this paper a new additional short-circuited stator winding in flux-barriers is proposed. The short-circuited stator winding is excited inductively by the supplied winding in the stator. As machines with flux-barriers in the stator use a higher harmonic as working harmonic, this working harmonic can be enhanced by the additional short-circuited stator winding while parasitic harmonics are reduced. This leads to a higher torque, lower rotor losses, better power factor and better efficiency without increasing the active machine volume.

Keywords— *Tooth Concentrated Winding, MMF Harmonics, Flux-Barriers, Short-circuited Winding, Finite Element Method*



24-teeth/28-poles machine with a concentrated winding, Flux-Barriers (FB) in the stator and an additional short-circuited winding in the FBs.

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