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EM_SPMSM_NL_003

- Products - MANATEE - Validations -

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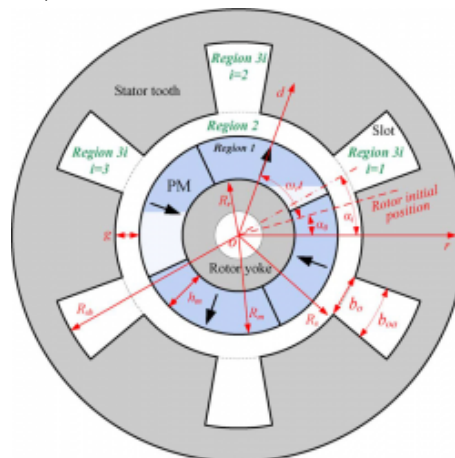
Objective

Validation objective

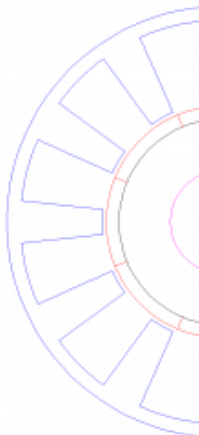
Topology	SPMSM
Model Types	Electromagnetic subdomain model EM2.SPMSM Electromagnetic linear magnetostatic FEM EM3.PMSM
Quantities	Airgap radial and tangential magnet flux density waveforms Cogging torque EMF Electromagnetic torque
Geometry	Internal rotor Open stator slots and semi-closed slots
Winding	NA

Machine

This validation simulate a machine that you can find in the article : Z. Q. Zhu, L. J. Wu, and Z. P. Xia, "[An Accurate Subdomain Model for Magnetic Field Computation in Slotted Surface-Mounted Permanent-Magnet Machines](#)" IEEE Trans. Magn., vol. 46, no. 4, pp. 1100-1115, 2010.

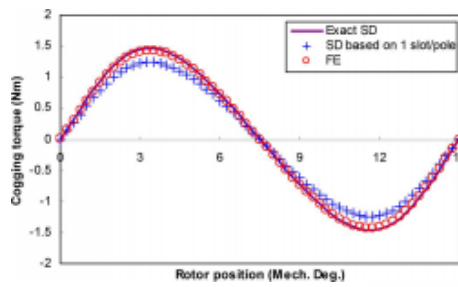


Topology of machine SPMSM_001 Topology of the machine in the article: Z. Q. Zhu, L. J. Wu, and Z. P. Xia, "An Accurate Subdomain Model for Magnetic Field Computation in Slotted Surface-Mounted Permanent-Magnet Machines" IEEE Trans. Magn., vol. 46, no. 4, pp. 1100-1115, 2010.

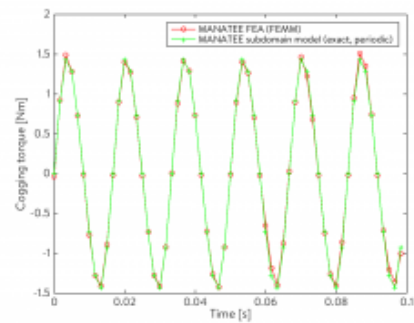


Manatee model for machine SPMSM_001 Manatee Model of the machine in the article : Z. Q. Zhu, L. J. Wu, and Z. P. Xia, ["An Accurate Subdomain Model for Magnetic Field Computation in Slotted Surface-Mounted Permanent-Magnet Machines" IEEE Trans. Magn., vol. 46, no. 4, pp. 1100-1115, 2010.

Results



Publication Cogging torque



Manatee cogging torque comparison (FEMM vs subdomain)