

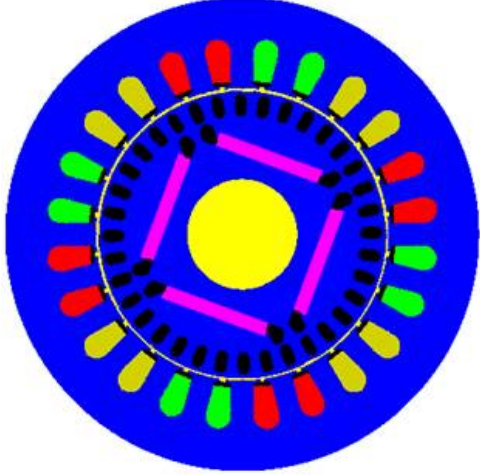
Line Start PM Machine

2D Application Note Summary

Introduction

This document deals with a demonstration of the software Flux2D for the modeling of Line Start PM Machine. The goal of this demo is to compute the performances of this machine.

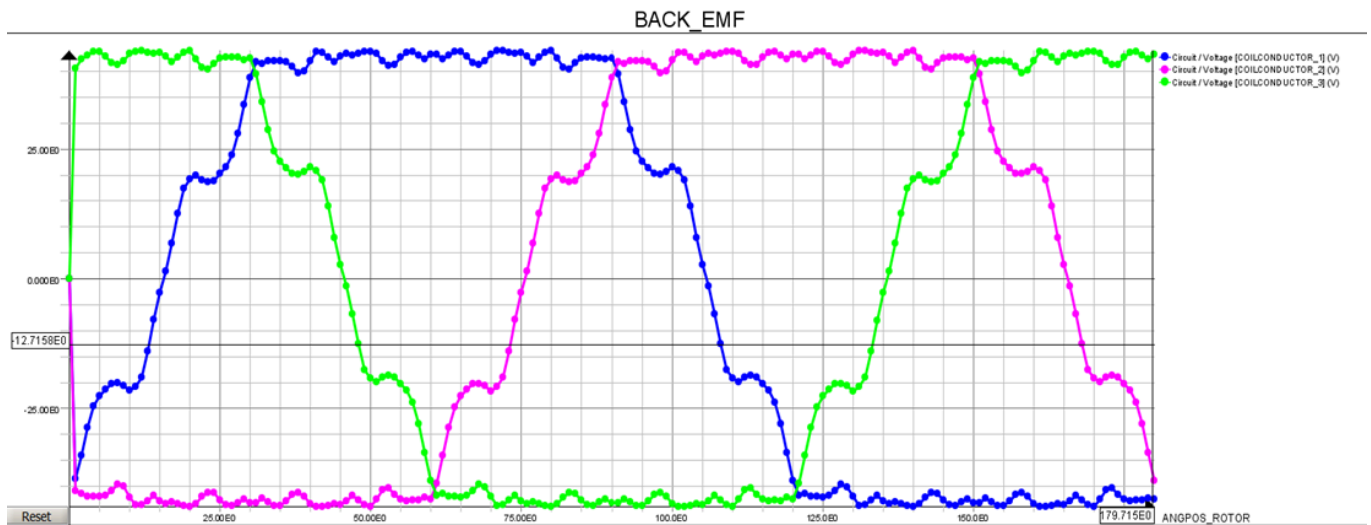
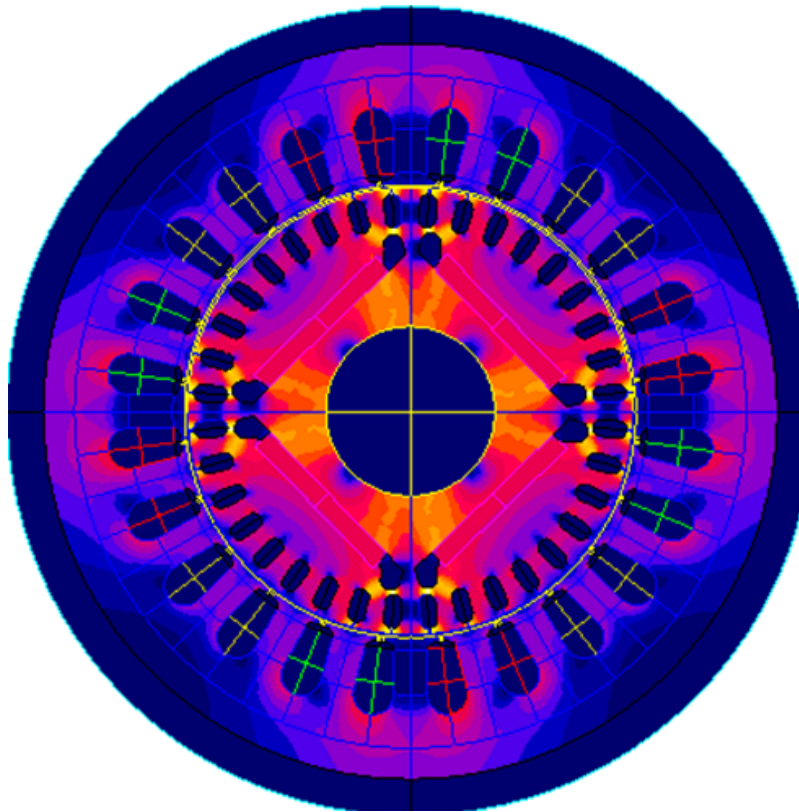
Applications	Flux main functions	Post-processed quantities
Transient magnetic	<ul style="list-style-type: none"> • 2D overlay • 2D curve • Isovalues 	<ul style="list-style-type: none"> • Back EMF • Current • Torque VS rotor position • Isovalues of flux density • Starting

Studied device	
<p>The studied device, a Line Start PM Machine presented in the figure below, includes the following elements:</p> <ul style="list-style-type: none"> • a fixed part (stator) including yoke, slots, and windings • an air gap • magnets • a movable part (rotor) 	

Example 1: Back EMF computation

Display Isovalues of the magnetic flux density on face regions

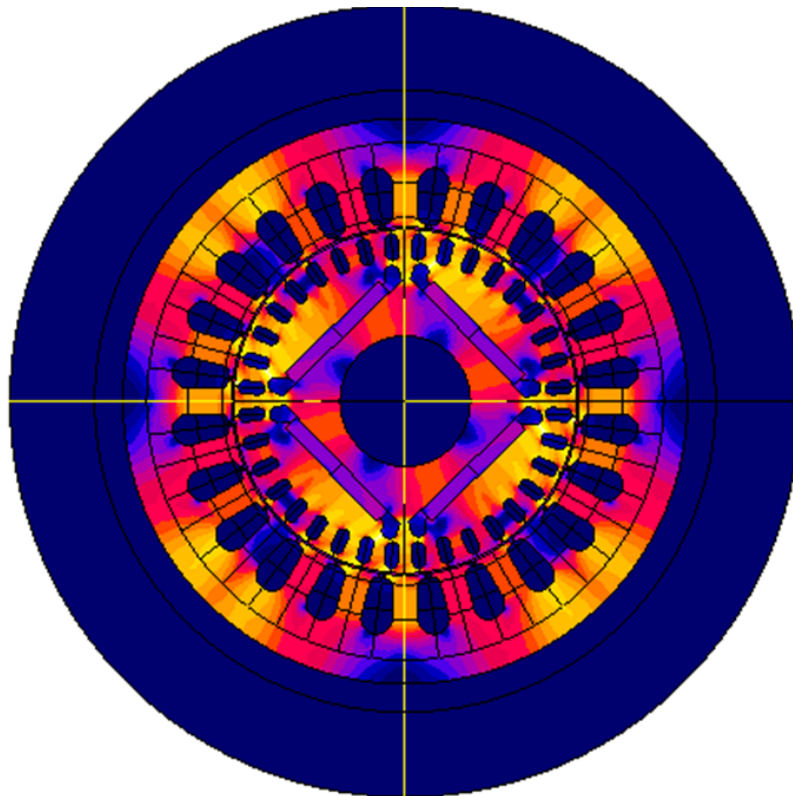
Plot 2D curve of the Back EMF



Example 2: Torque computation

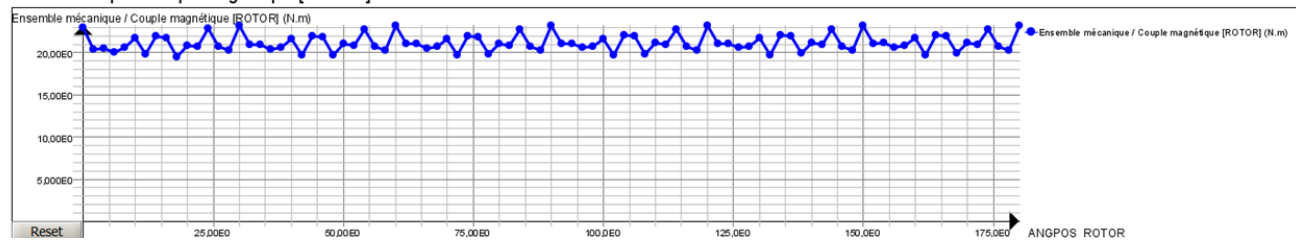
Display Isovalues of the magnetic flux density on face regions

Plot 2D curve of the Torque



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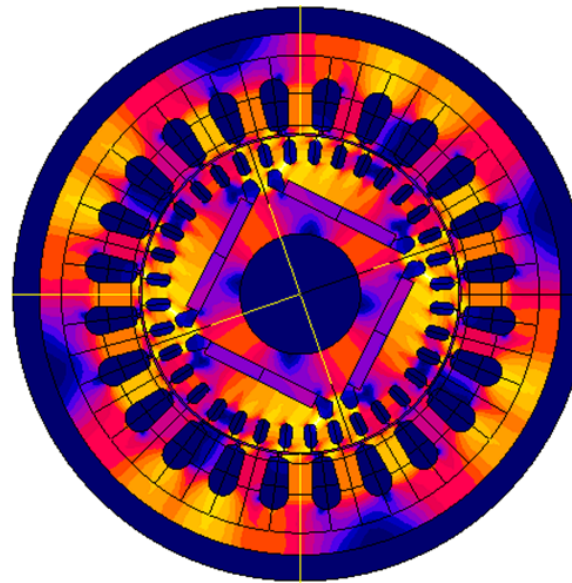
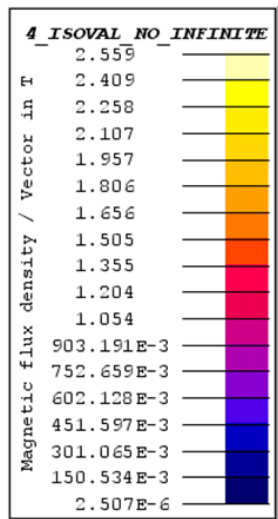
Ensemble mécanique / Couple magnétique [ROTOR]



Example 3: Starting

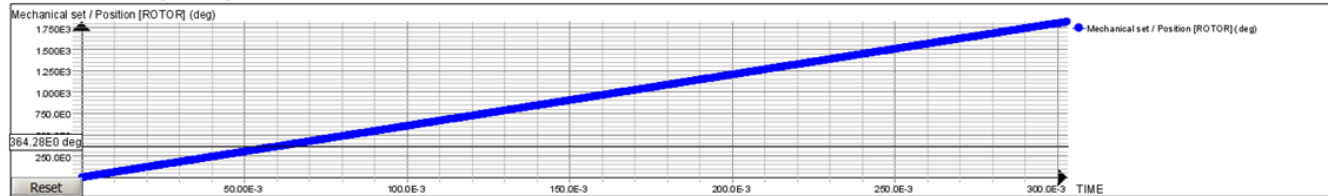
Display Isovalues of the magnetic flux density on face regions

Plot 2D curve of the Torque and speed

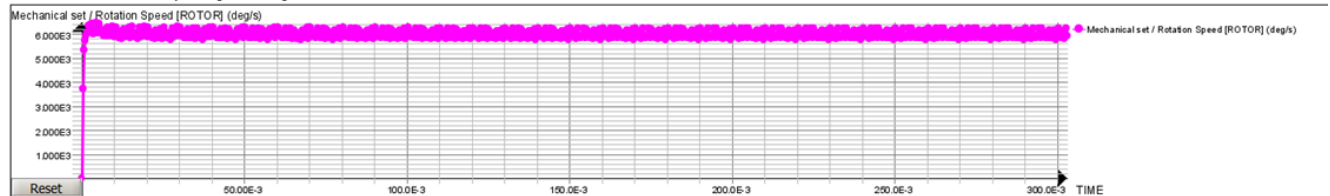


MECA

Mechanical set / Position [ROTOR]



Mechanical set / Rotation Speed [ROTOR]



Mechanical set / Magnetic torque [ROTOR]

