



MODELLING OF HIGH POWER SHIELDED CABLES

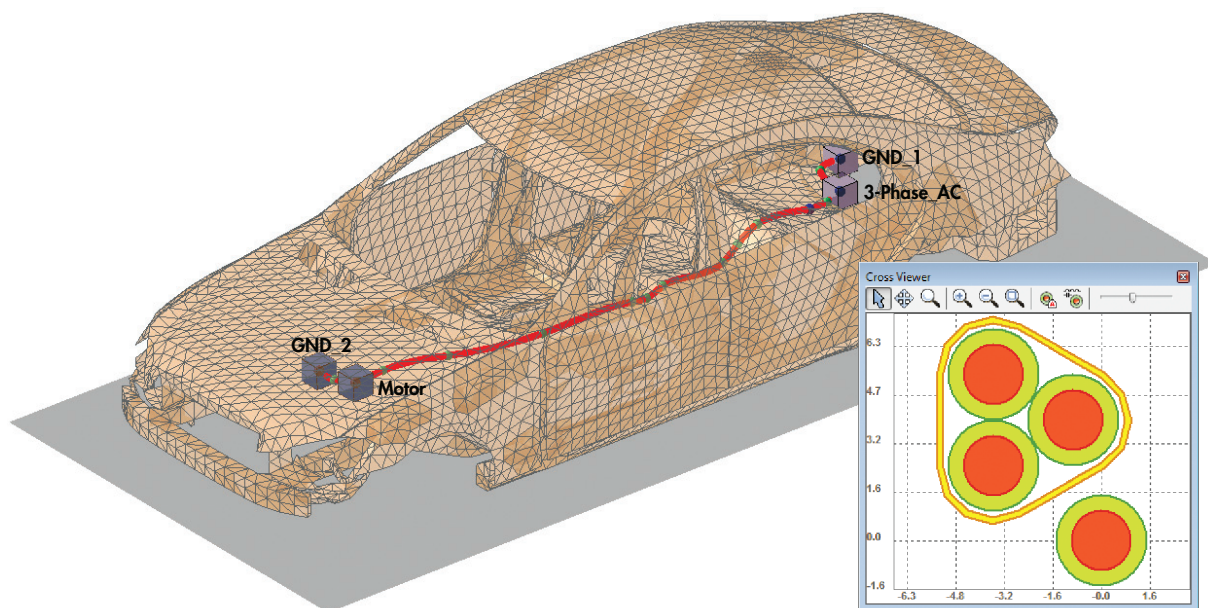
Introduction

This application note demonstrates modelling of high power shielded cables in EMC Studio Hybrid Analysis Type. Multicore shielded cable with braided shield in car body is considered.

Simulation Model Description

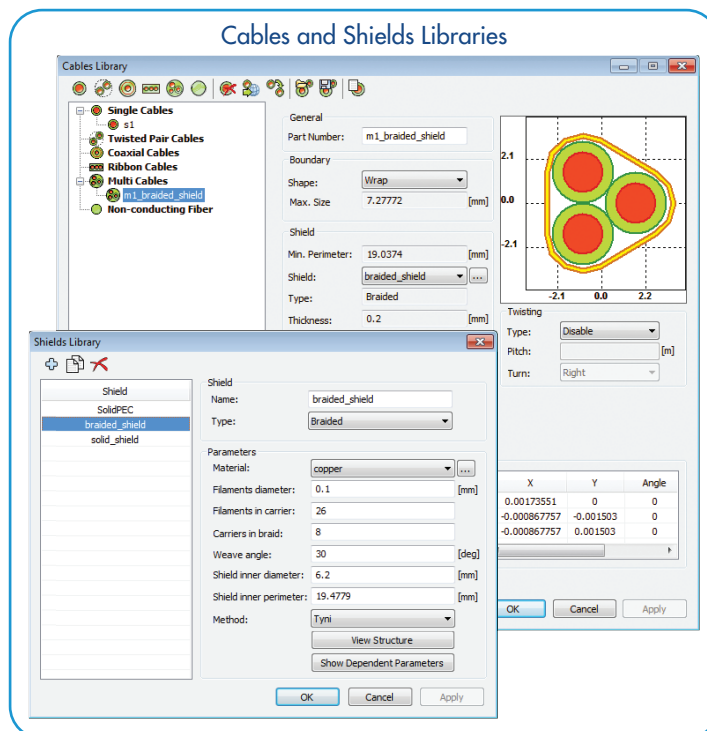
Noise coupled from high power shielded cable to neighbour single cable is analyzed in frequency range from 1 MHz to 80 MHz. Main part of cable bundle is routed under the car chassis.

Cable Harness Layout and Cross Section View



Definition of single and shielded multicore cables parameters are performed in Cables Library:

Multi Cable Parameters	
Shape	Wrap
Shield type	Braided
Shield thickness, [mm]	0.2
Number of cables in multi cable	3
Braided Shield Parameters	
Material	Copper
Filaments diameter, [mm]	0.1
Filaments in carrier	26
Carriers in braid	8
Weave angle, [deg]	30
Shield inner diameter, [mm]	6.2
Shield inner perimeter, [mm]	19.4779
Optical coverage, [%]	84.5
Fill factor, [%]	60.7

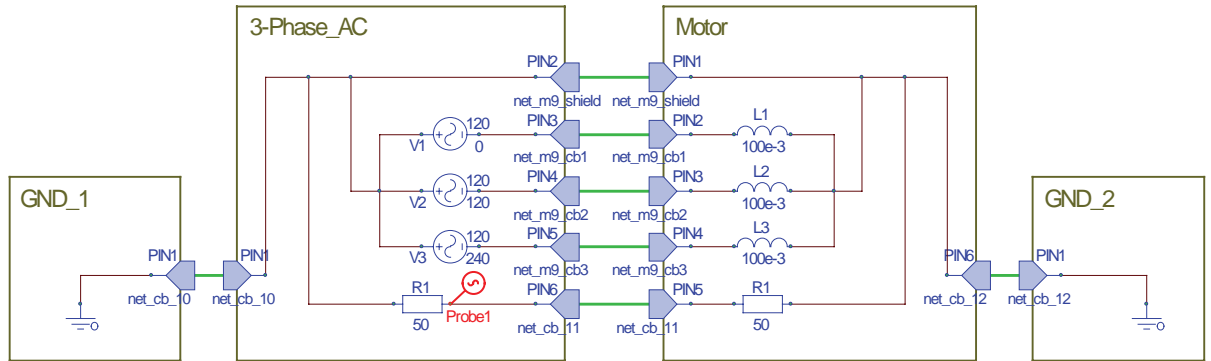




MODELLING OF HIGH POWER SHIELDED CABLES

High power shielded cable connects "3-Phase_AC" generator model with "Motor". Grounding is provided at both sides via additional grounding wires. Single cable is terminated with 50 Ohm loads.

Schematic Representation of System



Results

Voltage coupled from high power shielded cable to neighbour cable is considered.

Simulation Results - Voltage Coupled in Cable Termination

