Your European Partner in Power Simulation

JMAG Software
Magnetic Field Analyses

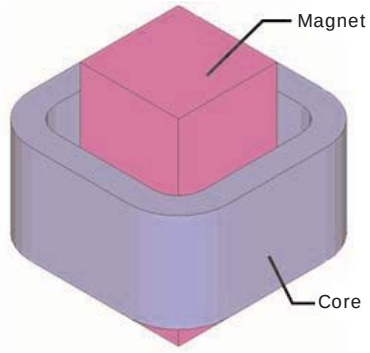
The JMAG Magnetic solution allows to cover a wide range of magnetic analyses both in 2D and 3D. From the Magnetic Static Analysis to the Magnetic Transient Response, novice engineers or experts will find complete magnetic solutions simply and quickly.
Magnetic flux, Magnetic field, Magnetization, leakage flux, current, loss, magnetic force, lorentz stored energy, permeance, voltage, eddy current, electric field, Coil Inductance, PM Motor Inductance... can be handled easily.

ST - Magnetostatic (Ax/2D/3D)

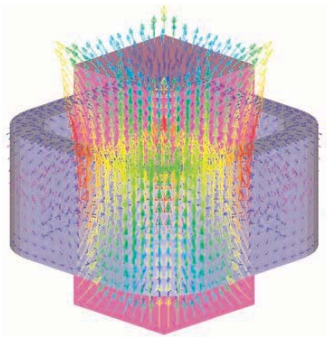
Magnetostatic analysis in both 2D and 3D. The analysis can include magnetic saturation and permanent magnets.

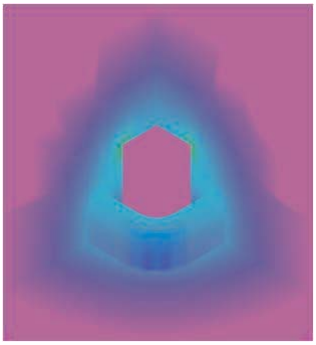
Outputs:

- magnetic flux
- magnetic field
- magnetization
- leakage flux
- current
- loss
- magnetic force
- Lorenz stored energy
- permeance

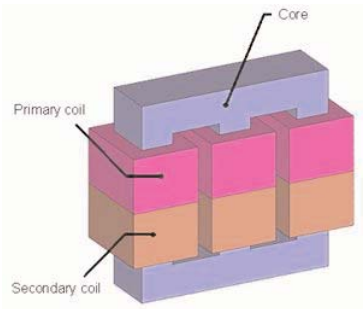


3D electromagnet analysis


Magnetic flux density vector


Magnetic field

FQ - Time harmonic magnetic (Ax/2D/3D)

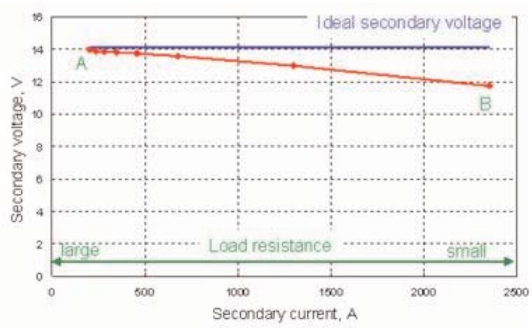


3D electromagnet analysis

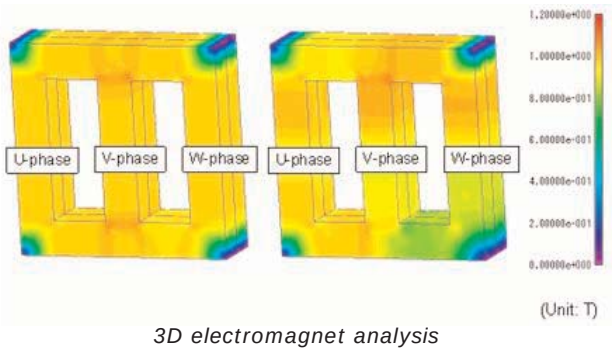
Simulates magnetic field induced by an alternating current in both 2D and 3D. Magnetic saturation, hysteresis loop and displacement current can be taken into account. An external circuit may be connected to the FEA model.

Outputs:

- magnetic flux
- magnetic field
- magnetization
- leakage flux
- current
- loss
- force
- stored energy
- voltage
- eddy current
- electric field
- coil inductance
- PM motor inductance



3D electromagnet analysis



3D electromagnet analysis

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www.powersys.fr

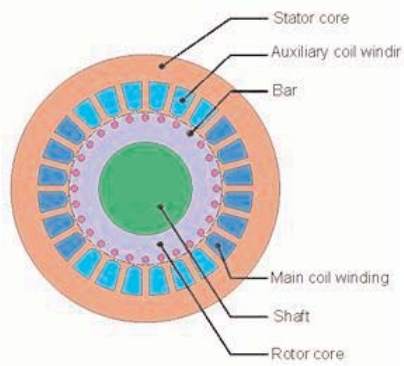
JMAG Software
Magnetic Field Analyses

DP - Transient magnetic (Ax/2D)

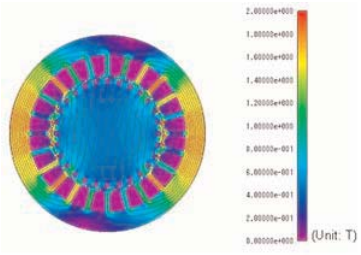
This is the 2D and axi-symetric version of TR. Combines the FEM model with BEM for the air region requiring a mesh only for objects such as the iron cores and coils.

Outputs:

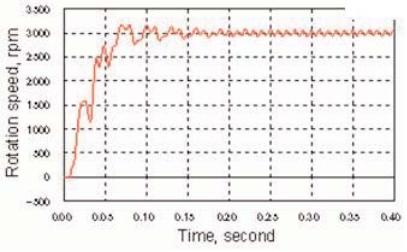
- magnetic flux
- magnetic field
- magnetization
- leakage flux
- current
- loss
- force
- stored energy
- permeance
- voltage
- eddy current
- displacement
- speed



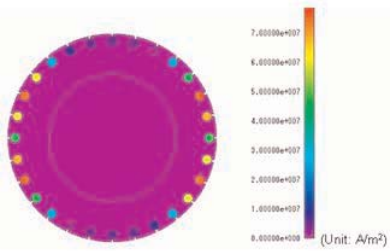
Starting performance analysis of a single phase induction motor



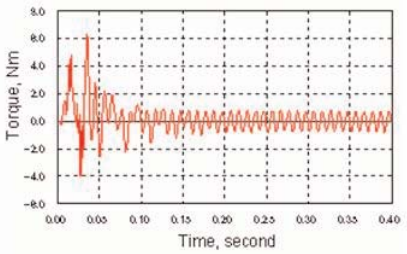
Flux density distribution



Rotation speed versus time graph



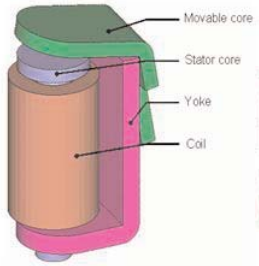
Eddy current density distribution

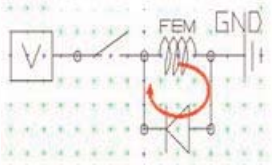


Torque versus time graph

TR - Transient magnetic (3D)

Operating time analysis of an electromagnetic relay



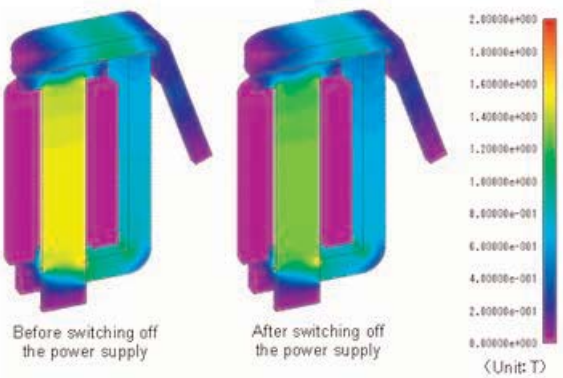


Circuit diagram

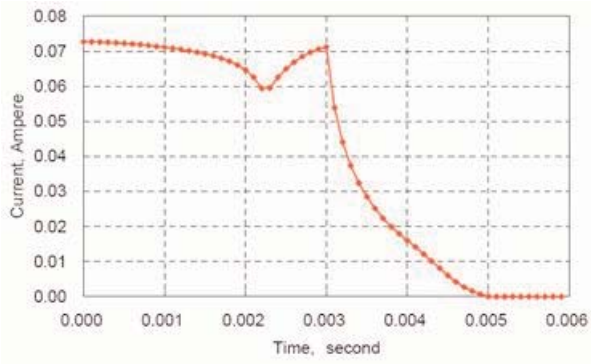
Provides transient magnetic analysis and covers most of the magnetic phenomena, such as eddy currents and magnetic saturation. Allows motion and an external circuit to be included in the analysis model. For 3D analysis only.

Outputs:

- magnetic flux
- magnetic field
- magnetization
- leakage flux
- current
- loss
- force
- stored energy
- permeance
- voltage
- eddy current
- displacement
- speed



Flux density distribution



Current versus time

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