Transients, Stability & Load-flow in the same software

LIGHTNING AND
SWITCHING TRANSIENTS
RENEWABLE ENERGY SOURCES
INSULATION COORDINATION
POWER SYSTEM DESIGN

HVDC
MOTOR STARTING
FERRORESONANCE
POWER ELECTRONICS AND FACTS
ADVANCED LINE AND CABLE MODELING
What is EMTP?

EMTP is the most complete and technically advanced software for simulation and analysis of power systems.

- EMTP is the reference for the simulation of electromagnetic and electromechanical transients. It is known to be the fastest, the most accurate and the most numerically stable time-domain software in the industry.
- Control systems and protections can be modelled in detail using the complete libraries of components.
- EMTP has a powerful unbalanced multi-phase load-flow capable of solving very large scale transmission and distribution grids, cases with more than 300 000 buses can be solved.

- EMTP has the most user-friendly graphical interface and load-flow, steady-state and time-domain simulations using the same grid data and within the same environment.
- EMTP is completely scriptable. EVERYTHING that can be done by hand can be automated by scripts!
- EMTP uses dynamic memory allocation and can simulate arbitrary topology networks without any user intervention: what you draw is what you simulate!

It includes:

- Advanced machine models and their controls (Exciters, Governors, Stabilizers)
- Accurate line and cable models and parameter calculation routines reproducing travelling waves and frequency dependency
- Advanced transformer models which include magnetic core saturation and hysteresis
- Detailed PV, Wind park, FACTS and HVDC models
- The most detailed protection relay models in the market
- Extensive library of control devices and functions
- Frequency-scan analysis options

The simulation of power systems has never been so easy!

During the time-domain simulations of power systems, several challenges can be met. Here is how EMTP answers them:

**Speed:** EMTP uses sparse matrices and can solve very large grids very efficiently! Parallel solver is available.

**Initialization:** EMTP offers a fast and automatic initialization method from load-flow solution. No need to waste your time with lengthy initialization process. The network is initialized right at the beginning of the simulation!

**Numerical instabilities:** EMTP uses a combination of trapezoidal and Backward Euler integration methods to eliminate numerical oscillations that may occur at discontinuities.

**Accuracy:** Solving non-linearities of, for example, a surge arrester, the magnetization of a transformer, or power-electronics converter switches, is challenging. EMTP is unique in this field since it uses a fully iterative solver to solve nonlinear models. It also offers an iterative solver for control systems with algebraic loops. We do not compromise with accuracy!

**Missing data:** EMTP helps you with a large database of typical parameters. Our world-class technical support is also there to help. You are never alone!

**Engineering challenges:** Simulating transients with EMTP is easy! Our technical support team is available to help and to guide you. You are never left alone!
Who uses EMTP?

The high modeling flexibility of EMTP allows engineers to perform a very wide range of studies. Our users are working in the following sectors: Research, Transmission & Distribution, Generation, Industry and Manufacturing.

Good news! Your university might qualify for a partnership program and benefit from many licenses for FREE.

Learn more at www.emtp.com

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<th>Feature</th>
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<td>Insulation coordination (switching, lightning, ferroresonance)</td>
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EMTP package includes

EMTPWorks: The Graphical User Interface
An advanced, yet easy-to-use graphical user interface that maximizes the capabilities of the underlying EMTP engine. EMTPWorks provides many customization options and is completely scriptable.

ScopeView: Data display and analysis
Provides waveform visualization and advanced mathematical post-processing capabilities. ScopeView is a data acquisition and signal processing software very well adapted for visualization and analysis of EMTP simulation results.

The computational engine
A powerful and super-fast computational engine that provides significantly improved solution methods for nonlinear models, control systems, and user-defined models.

Exciter and Governor: Turn time-domain transient stability simulations into a child’s play
This Exciters and Governors library contains more than 50 standard models for governors, exciters and power system stabilizers.

Protection Toolbox: The next level for Protection studies has arrived!
This toolbox opens new doors for simulation and analysis of protection systems. Both steady-state and time-domain simulation options are available.

Simulink DLL: Import Simulink® models in two clicks
This toolbox allows to import Simulink® models, regardless of complexity, using two clicks.

EMTP services:
Before and after sales support is very important to us. EMTP’s team will provide you with comprehensive assistance and technical support.

- Dynamic development roadmap
- Prompt and effective technical support
- Strong customer service culture

FOR COMMERCIAL & SUPPORT:
France: +33 442 610 229
USA: +1 727 288 8100
India: +91 44 4221 8118

FOR CONSULTING:
Canada: +1 438 870 8884

A unique email address: info@emtp.com

Discover the power of EMTP!
Try EMTP and our comprehensive support services during 15 days:

If you have not already tried EMTP, feel free to request your full professional trial license to explore the full capabilities of the software.

Technical support services:
During your evaluation, our technical support team will assist you in your use of the software.

Online support section:
In this section, you will find video tutorials, an exchange platform, FAQ, technical presentations and a forum.

The EMTP User Community is becoming more and more active!
The EMTP User Community is here to support User Groups and share technical presentations. The community is animated by involved and motivated academics and professionals from industry.

Events:
Regular events: trainings, user group meetings and courses.