



[>> GTI Opens European Office in Stuttgart](#)

[>> Version 6.2 Released -- Ideal Platform for "Collaborative Engineering"](#)

[>> DPF Model: Soot Filtration and Regeneration](#)

[>> Aftertreatment Modeling with New Chemistry Libraries](#)

[>> GT-SUITE Users Conferences in Europe and US](#)

[>> Customer Survey Results](#)

[>> QuickTip: Finding Timestep Restricting Elements](#)

[>> Latest Publications & Presentations](#)

GTI Opens European office in Stuttgart:

In September 2006, GTI opened its first office in Europe, dedicated to serving the engine, powertrain, and vehicle industry throughout Europe. This office is located in Stuttgart, Germany, and is led by Mr. Christian Armbruster. Mr. Armbruster is a fluent speaker of German, English, and French, and is available to GT-SUITE contacts throughout Europe. His role is to promote the use of GT-SUITE as a comprehensive software solution for integrated powertrain analysis in Europe. He will not be replacing your current day-to-day support contacts with GTI, those will continue as before. Christian may be contacted at C.Armbruster@gtisoft.com or by phone at (+49) 711-664-7617.

GT-SUITE Version 6.2 Released -- Ideal Platform for "Collaborative Engineering":

Version 6.2 was released in September 2006. This latest release of GT-SUITE represents a major milestone for Gamma Technologies, where all of the parts of its decade-long development related to "Collaborative Engineering" all come together. It integrates into a single tool the capabilities to model engine performance, acoustics, aftertreatment chemistry, valvetrain and cranktrain dynamics, vehicle and driveline dynamics, thermal management, fuel injection and hydraulics. This allows all the design teams working on a particular engine+vehicle project to share the same tool, share data, and carry out integrated analyses of the complete engine and vehicle systems.

DPF Model Represents Soot Filtration, Pressure Drop and Regeneration:

GTI has introduced a set of versatile aftertreatment tools in its v6.2 release. It includes models of Diesel Particulate Filter (DPF), capable of modeling soot filtration, pressure drop and active and passive regeneration. Two models are provided, one is a fast-executing lumped model, and the other is a spatially resolved model. Training classes are scheduled for Frankfurt, Paris, and Chicago. For more information, please go to: <http://www.gtisoft.com/training/training.php>

Aftertreatment Modeling with New Chemistry Libraries:

A new chemistry library has been implemented in GT-POWER. It allows modeling of any type of catalyst and catalyst combinations, including DOC, SCR, LNT and TWC. Users can input any desired reaction set into library templates provided for this purpose. These templates are very flexible and as such can be used to model virtually any chemical reactor (gas reactions, 3rd-body reactions, Troe/SRI falloff, surface chemistry, coverage and storage). An important strength is the ability to automatically calibrate the kinetic parameters of the catalytic reactions, using the standard GT-SUITE built-in DoE optimizer tool. Models can be run for individual catalysts, or for complete systems (multiple catalysts + engine + vehicle). Training classes are scheduled for Frankfurt, Paris, and Chicago. For more information, please go to: <http://www.gtisoft.com/training/training.php>

GT-SUITE Users Conferences in Europe and US:

The 10th Users Conferences were held in October in Frankfurt and in November in Dearborn. They were again highly successful, attracting a record number of well over 230 attendees.

To see more go to: <http://www.gtisoft.com/2006 UserConferences - engine simulations.html>

The attendees came from all over Europe and North America to listen to user presentations, and to get an update on the new features of Version 6.2. See our website for the Conference Program and for download of the presented papers. Please note that as a result of the increasing number of attendees, we have decided to look for a new hotel, with larger facilities, in Frankfurt for next year, after many years at the same location.

Customer Survey Results:

In a survey of attendees at our recent Users Conference we asked our users several questions. More than one third of the participants answered. We were pleased to see that of these 95% said that they were satisfied with the conference. We asked customers to comment more specifically about our products and their various features. From the new features in GT-POWER, a majority of users expressed their interest in the following: TPA, Aftertreatment & Real-Time Applications. As for integrated simulations in GT-SUITE, adding a GT-DRIVE model (Virtual Driving Cycle, Acceleration Test for emission & fuel consumption) to a GT-POWER model was the number one application for 37% of responders; adding a GT-COOL model (Engine Cooling Circuit, Charge Air Cooling & EGR Cooling) to a GT-POWER was the second most important one, gathering 26% votes. Among the extra-value facilities in GT-SUITE, the most appreciated are: Direct Optimizer, DoE, DoE Optimizer and Distributed Running. These results help us to understand more accurately how our products are used, and therefore we would like to thank all users who have answered the questions.

Quick Tip: Finding Timestep Restricting Elements:

The explicit flow solver of GT-SUITE, generally used for GT-POWER and GT-FUEL models, enlists the use of the Courant condition to determine the largest timestep the code can take during its solution. As a general rule, one should find that their GT-POWER model runs at about one degree timesteps at the engine's top speed, and the timestep should scale down nearly linearly with engine speed. If your model is taking much smaller timesteps than this, there are two simple ways to locate the offending element(s) within GT-POST. In the Plots-Tables mode, go to the Tables tab and view the Flow Solution Numerics group. There will be reported a list of the timestep restricting elements, and the percentage of the time they were the restrictive elements. A second solution is to switch to the RLT Viewer mode and scroll about half way down the list of available quantities that can be viewed. There you will find the Minimum Courant Time Step. Double click on this, and the map will be color coded with the timestep requirement of each element. This will give you information on exactly which elements are restricting the timestep, and how much smaller their timesteps are relative to the other elements in the model. If you find one or two elements with a much smaller timestep than all others in the model, you can consider merging those elements into adjacent elements, which will dramatically reduce the simulation run time.

Latest Publications & Presentations:

If you have published an article recently where our products were helpful to you, do not hesitate to inform us, so we can make all of our users benefit from it through the newsletter.

- **GT-SUITE User Conference Presentations**

Presentations coming from following companies & universities: FEV, RWTH Aachen, SAIC MotorCo, GM Powertrain Europe, DaimlerChrysler Corporation, Borg Warner, Engsim, General Motors Corporation, Cummins Engine Company, Renault F1, Mann+Hummel GmbH, BMW AG, MAN B&W Diesel AG, Politecnico di Torino, Wärtsilä Italia S.p.A, Prodrive AT
(available for download at: <http://www.gtisoft.com/confarchive.html>)

- **Virtual Cooling System Design** (in German), FEV, HdT Conference, Berlin, June 2006
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