DIAdem™

Getting Started with DIAdem

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About This Manual

Use this manual to familiarize yourself with the DIAdem environment and the basic DIAdem features you use to evaluate and present your data.

This manual contains exercises to teach you how to load data, perform basic evaluations of your data, analyze data sets, automate functions in your data, and create presentations for your data. These exercises take a short amount of time to complete and help you get started with DIAdem.

Throughout each exercise, you will see illustrations that provide information about the concepts associated with the steps. The end of each chapter includes a summary of the main concepts taught in that chapter. Use these summaries to review what you learned.

Conventions

The following conventions appear in this manual:

<>	Angle brackets indicate a key you press to perform a function, for example, <Ctrl>.
»	The » symbol leads you through nested menu items and dialog box options to a final action. The sequence **File»Page Setup»Options** directs you to pull down the **File** menu, select the **Page Setup** item, and select **Options** from the last dialog box.
	This icon denotes a note, which alerts you to important information.
	This icon denotes a tip, which alerts you to advisory information.
bold	Bold text denotes items that you must select or click in the software, such as menu items and dialog box options. Bold text also denotes parameter names.
italic	Italic text denotes variables, emphasis, a cross reference, or an introduction to a key concept. This font also denotes text that is a placeholder for a word or value that you must supply.
`monospace`	Text in this font denotes text or characters that you should enter from the keyboard, sections of code, programming examples, and syntax examples. This font is also used for the proper names of disk drives, paths, directories,

	programs, subprograms, subroutines, device names, functions, operations, variables, filenames and extensions, and code excerpts.
`monospace italic`	Italic text in this font denotes text that is a placeholder for a word or value that you must supply.

Related Documentation

The following documents contain information that you might find helpful as you read this manual:

- *DIAdem: Data Analysis and Report Generation*
- *DIAdem Help*, available by selecting **?»Contents**

1

Creating a Presentation with DIAdem

DIAdem organizes various sets of functions in panels. Using different panels, you can load, analyze, calculate, and present your data. You can also automate repeated tasks for simplified use. Each panel provides powerful tools to complete the following tasks:

- Manage data with DIAdem NAVIGATOR.
- View data with DIAdem VIEW.
- Evaluate data with DIAdem ANALYSIS.
- Generate reports with DIAdem REPORT.
- Automate repeated tasks with DIAdem SCRIPT.
- Link data with videos and 3D models using DIAdem CLIP and DIAdem INSIGHT.

In the following exercise, you will use basic features of DIAdem to create your first presentation.

Using the Report Wizard

The Report Wizard allows you to create a report by selecting the data and the layout from a dialog box.

Note If the Report Wizard does not appear before you start the following exercise, press <Ctrl-W> to activate the Report Wizard. You can also start the Report Wizard from the toolbar in DIAdem VIEW and DIAdem REPORT.

To create a report with the Report Wizard, complete the following steps:

1. Click **Next**.
2. Select **SQL: Default SQL** from **Data Sources**.
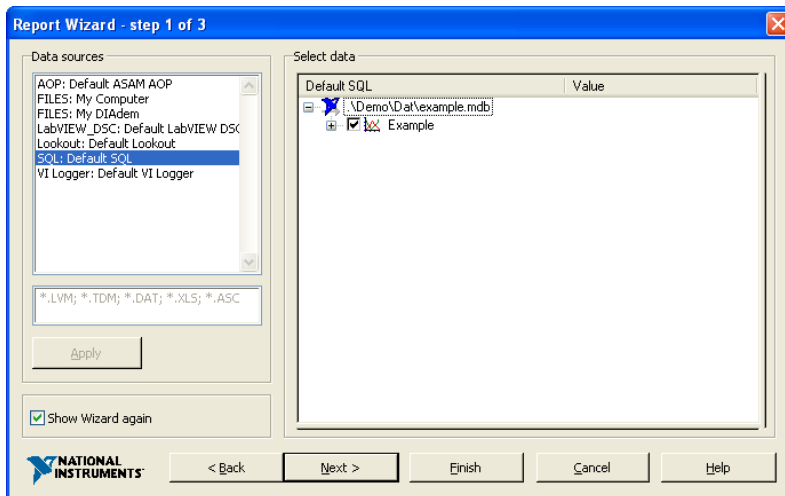3. Click **+** next to `..\Demo\Dat\example.mdb`.
4. Select **Example**.

Figure 1-1. Creating a Report with the Report Wizard

5. Click **Finish**. DIAdem displays the report you just created with the Report Wizard.

✎ **Note**   You can deactivate the Report Wizard by selecting **Settings»Desktop Parameters» General** and deselecting **Start with DIAdem**. You can also deselect **Show Wizard again** in the Report Wizard. You do not need the Report Assistant to complete the remaining exercises in this manual.

Loading Data

DIAdem NAVIGATOR offers access to data files and databases. The data used in DIAdem represent measurements that you have taken, information that you have loaded into DIAdem, and calculations you have performed on raw data.

To load data into the Data Portal, complete the following steps:

1. Select the **DIAdem NAVIGATOR** panel.

2. Click **Delete Internal Data**.

3. Select the path My DIAdem\DIAdem Demo.

4. Select the data file Data1.tdm.

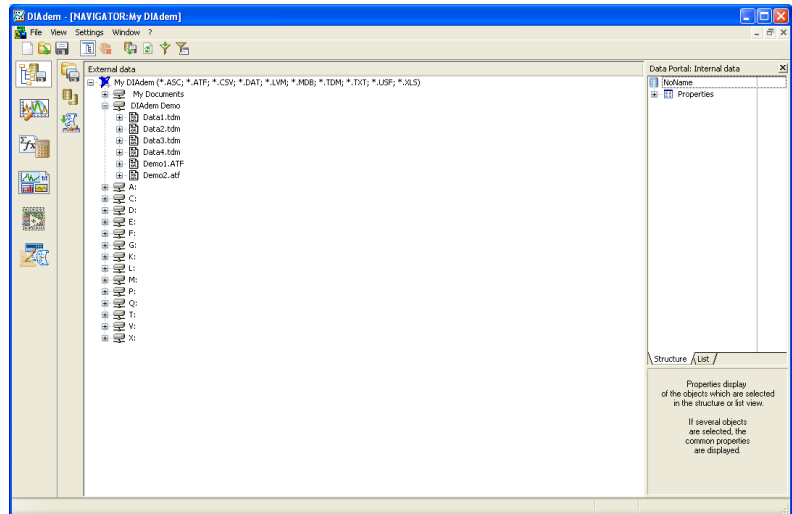5. Drag and drop the data file Data1.tdm to the Data Portal on the right of the screen.

Figure 1-2. Loading Data from DIAdem NAVIGATOR to the Data Portal

Creating a Report

With DIAdem, you can create presentations from layouts that you configure yourself or from existing templates. To create a presentation for the data you just loaded into the Data Portal, complete the following steps:

1. Select the **DIAdem REPORT** panel.

2. Click **Load Layout**.

3. Select the layout file Report1.tdr in the ..\DIAdem 9.0\ Demo\Gra folder and click **Open**.
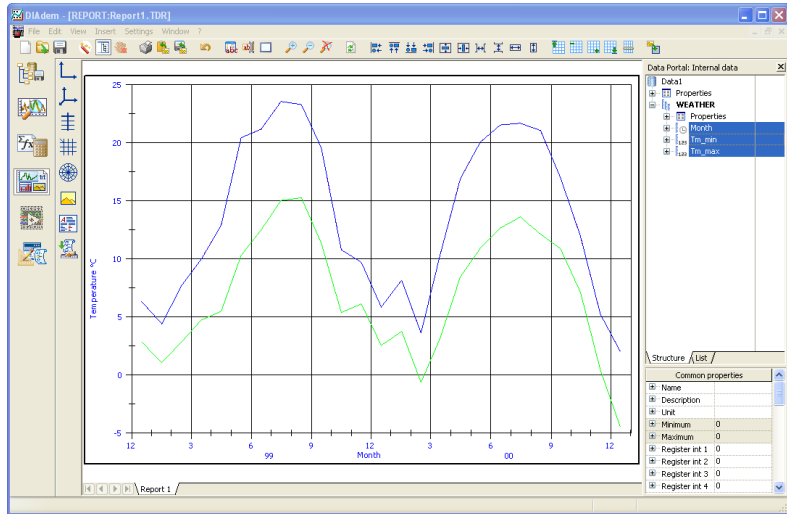
4. Click **Redraw**.

Figure 1-3. Creating a Report from an Existing Template

Summary

The following topics are a summary of the main concepts that you learned
in this chapter.

Report Wizard

Use the Report Wizard to simplify the selection of data channels, curves,
and layout with which DIAdem displays a report.

Panels

DIAdem contains different panels, each performing a specific set of
functions. Each panel has a corresponding icon in the panel bar on the outer
left of the DIAdem workspace. Selecting different panel icons changes the
functions available in the DIAdem user interface.

Workspace

The workspace is where activities for each panel take place. For example,
the workspace for DIAdem NAVIGATOR contains external data files and
databases with different data sets, and the workspace for DIAdem
REPORT contains the layouts with axis systems, tables, text, and graphics.

Toolbar

Each panel in DIAdem has its own toolbar that provides specific functions for that panel.

Data Portal

The Data Portal organizes internal data in DIAdem. Use the Data Portal to access internal data in DIAdem. You can drag and drop channels from the Data Portal into the workspace of different panels.

DIAdem NAVIGATOR

DIAdem NAVIGATOR shows the structure of external data. Use DIAdem NAVIGATOR to access external data to load into the Data Portal.

DIAdem REPORT

With DIAdem REPORT, you can create reports for your data. You can then save report layouts as templates to use for future reports of your data.

2

Managing Your Data

Data from files and databases is the fundamental element of DIAdem. With DIAdem NAVIGATOR, you can browse, load, and save your data.

Loading Data

To load data into the Data Portal, complete the following steps:

1. Select the **DIAdem NAVIGATOR** panel.

2. Click **Delete Internal Data**.

3. Select **File Based Data Storage** from the group bar.

4. Select **All registered data files** from the function bar.

5. Select the data path `My DIAdem\DIAdem Demo`.

6. Select the data file `Data2.tdm`.

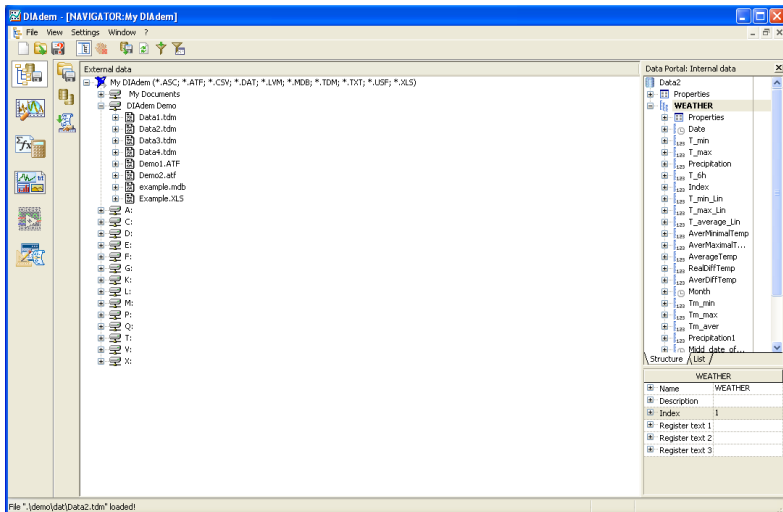7. Drag and drop `Data2.tdm` to the Data Portal.

Figure 2-1. Loading Data from DIAdem NAVIGATOR to the Data Portal

Organizing Data

You can organize and remove data in the Data Portal to focus on the data that you want to analyze. To remove unwanted data, complete the following steps:

1. Select the channel **Precipitation**.

2. Press <Shift> and click the data channel **AverYearRain**. The data channels between the channel Precipitation and the channel AverYearRain appear highlighted.

3. Press <Del>.

4. Click **OK**.

The data channels Date, T_min, and T_max are the only channels remaining in the Data Portal under the channel group WEATHER.

Saving Data

To save your data, complete the following steps:

1. Select the path My DIAdem\DIAdem Demo in DIAdem NAVIGATOR.

2. Select the channel group WEATHER in the Data Portal.

3. Drag and drop WEATHER into the Demo path.

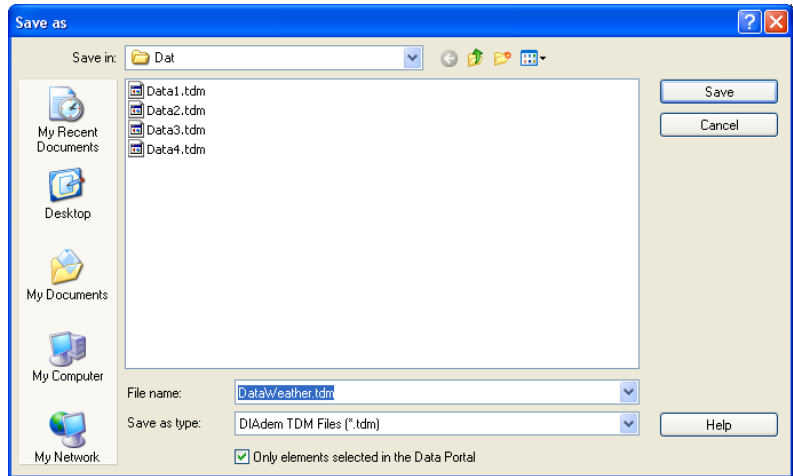4. Enter DataWeather.tdm in the Save As dialog box.

5. Click **Save**.

Figure 2-2. Saving Data in DIAdem NAVIGATOR

Summary

The following topics are a summary of the main concepts that you learned in this chapter.

DIAdem NAVIGATOR

DIAdem NAVIGATOR shows the external data structure in different hard drives, directories, and servers. Use DIAdem NAVIGATOR to find the external data that you wish to load into DIAdem and to save internal data that you have processed in DIAdem.

External Data

External data represents the data saved outside of DIAdem in the form of data files and databases. DIAdem shows the organization and hierarchy of external data in DIAdem NAVIGATOR.

Data Portal

Internal data in the Data Portal represents the data channels and descriptive information used by the various panels inside of DIAdem.

DIAdem does not automatically save changes when you modify data in the Data Portal. If you process or modify the data currently loaded in the Data Portal, processing the data affects *only* the data in the memory, not the source data file or database from which the data was loaded. This helps to avoid accidental modifications to your data and results. You can experiment with your data while avoiding the risk of destroying the original data file or database.

Tip In addition to clicking directly on channels to select them in the Data Portal, you can click on the symbols next to channels to select and deselect them. By clicking on the symbols next to the channels, you can select several channels without pressing <Shift> or <Ctrl>.
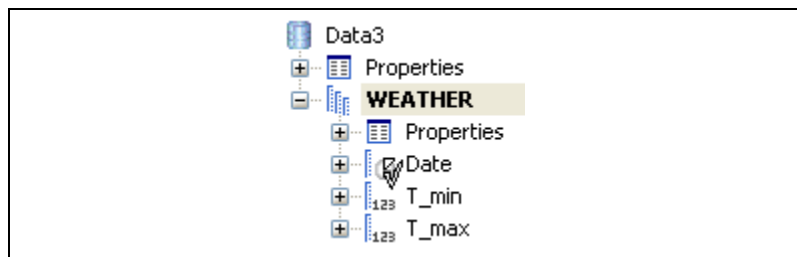

Figure 2-3. Selecting channels with the Selection Cursor

Channel Groups

Channel groups in the Data Portal represent a collection of data channels that you have acquired during an experiment or calculated in an evaluation.

Data Channels

Data channels in the Data Portal represent the measurement data from individual test sensors recorded during a test, data series loaded from an external data file, or a new channel resulting from a calculation.

Function Bars

In the function bars, prepared views of external data are available for file-based and server-based data storage.

3

Viewing and Editing Data

With DIAdem VIEW, you can view and analyze data graphically in different screen layouts. You can also view and edit data points numerically in tables.

Viewing Curves

To view the weather data in an axis system, complete the following steps:

Note If you have not completed the exercise from Chapter 2, *Managing Your Data*, load the data set Data3.tdm located in DIAdem Demo.

1. Select the **DIAdem VIEW** panel.

2. Click **New Layout**.

3. Click **Regular Screen Partitioning** in the group bar.

4. Click **Two Areas** in the function bar.

5. Right-click in the lower worksheet area and select **Display Type» 2D Axis System**.

6. Select the data channel **Date**.

7. Press <Ctrl> and select the data channel **T_min** in the Data Portal.

Note When selecting data, the first channel you select, in this case Date, is assigned to the x-axis. The subsequent channels appear as curves.

8. Drag and drop the channels selected in the Data Portal into the lower worksheet area.

9. Select the data channel **Date**.

10. Press <Ctrl> and select the data channel **T_max** in the Data Portal.

11. Drag and drop the channels selected in the Data Portal into the lower area. DIAdem updates the display area with an additional curve.

12. To display the legend, hold the mouse cursor over the right edge of the area and drag the mouse to the left.

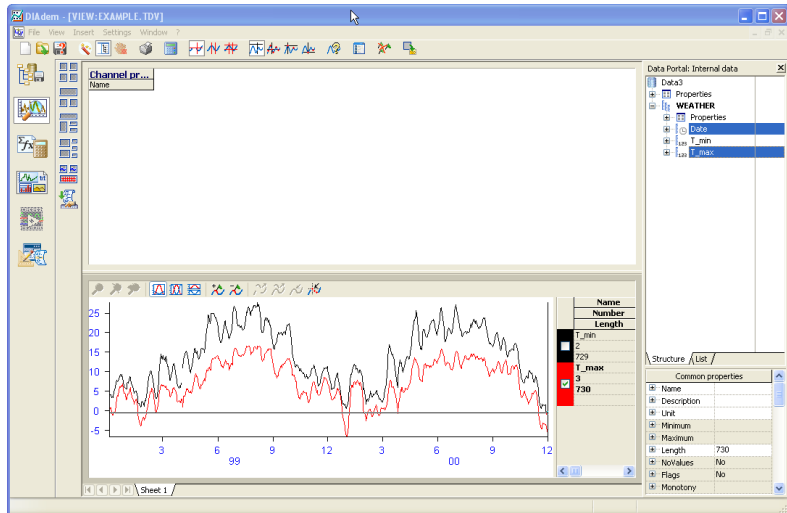**Note** You must select both an x and y-channel for the display in the DIAdem VIEW worksheet.

Figure 3-1. Viewing Temperature Data as Curves

Working with Tables

Tables allow you to view and edit data channels numerically.

Creating a Table

You can display and edit data points in DIAdem VIEW. To create a table in DIAdem VIEW, complete the following steps:

1. Right-click in the top area and select **Display Type»Channel Table** from the shortcut menu.

2. Press <Shift> and click the **Date** and **T_max** data channels from the Data Portal. All the data channels are selected.

3. Drag and drop the channels selected in the Data Portal into the upper worksheet area.

Note The columns appear in the order you select data channels in the Data Portal.
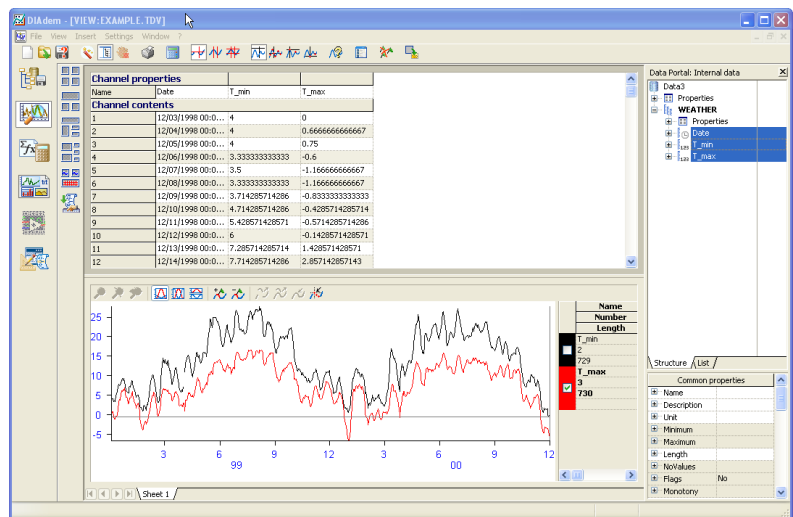

Figure 3-2. Creating a Table with Data Channels

Editing a Table

To edit the values in a table cell, complete the following steps:

1. Click the cell in the channel **T_max**, row **10**.

2. Enter the value 50 and press <Enter>. After pressing <Enter>, the curves in the axis system area change showing the newly entered data point.

Using the Curve Cursor

To use the curve cursor to follow the specific values of a curve in an axis system, complete the following steps:

1. Click **Curve Cursor**.

2. Click the crosshairs of the curve cursor. Drag the curve cursor along the curve. If the crosshairs do not appear in the axis system, click in the axis system.

3. Right-click in the axis system area and make sure **Display Coordinates** is selected. As you move the **Curve cursor**, DIAdem displays the x and y-values of the data points in the Coordinates window.

4. Click the checkboxes on the right side of the axis system area to determine which curve is the active curve to display the coordinates for in the Coordinates window.

Zooming Curves

You can zoom curves in DIAdem VIEW to examine specific portions of curves more closely.

Choosing an Area to Zoom

To adjust the band cursor to examine a specific section of the curve, complete the following steps:

1. Click **Band Cursor**.

2. Adjust the width of the band by moving the mouse cursor over one of the **Band Cursor** elements. The cursor changes to a double-sided arrow. Now adjust the width of the band cursor.

3. Drag the **Band Cursor** to the segment of the curve that you want to examine.

4. Click **Zoom, Static** to zoom a selected area.

5. Click **Zoom Off** to return from the zoomed area to the entire area.

Zooming Dynamically

To scroll along the curves in the axis system within a specific range, complete the following steps:

1. Right-click in the axis system area and select **New Area»Bottom** from the shortcut menu. A new workspace area appears below the axis system.

2. Press <Ctrl> and select the channels **Date**, **T_min**, and **T_max**.

3. Drag and drop the channels into the lowest workspace area.

4. Click in the lowest workspace area and select **Zoom, Dynamic**.

5. Click inside the band cursor in the middle area to scroll the zoomed curves in the lower axis system area.
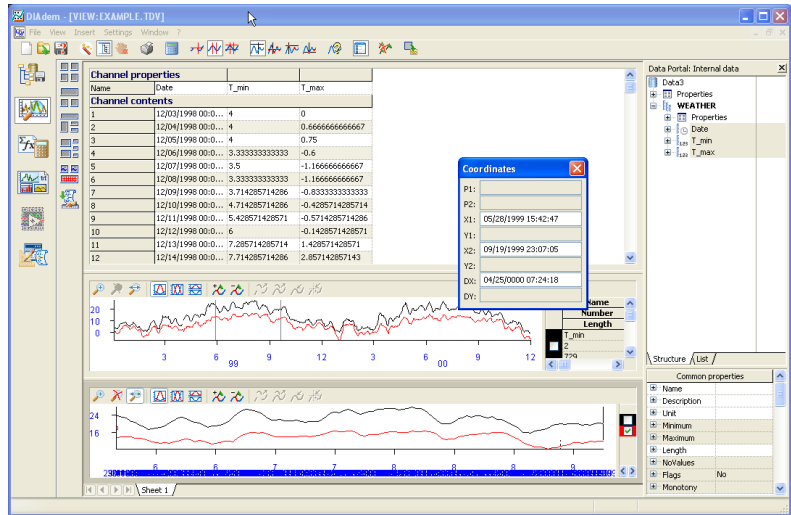
Figure 3-3. Creating a Zoomed View

Summary

The following topics are a summary of the main concepts that you learned in this chapter.

Curves

Curves graphically represent the relationship between x and y-channels.

Axis System

An axis system is where you can display curves of your data set. With an axis system composed of an x-channel and multiple y-channels, you can view how your data relate to each other.

Tables

In tables, you can view the individual data points for data channels. You can also edit data points for data channels in tables.

Cursors

DIAdem VIEW provides a variety of cursors to analyze your data. With the
curve cursors, you can run along a curve and analyze individual values.
You can also use cursors to locate minimum and maximum values within
a curve. The band and frame cursors allow you to concentrate on specific
portions of data.

Zooming

Zooming allows you to focus on a specific range in an axis system. You can
either zoom an area of an axis system statically, if you are certain of a
specific area or you can zoom an area of an axis system dynamically, if you
wish to scroll along a zoomed axis system.

4

Analyzing Data Mathematically

With DIAdem ANALYSIS you can apply predefined mathematical functions, including basic math, curve fitting, signal analysis, and statistics. You can also perform your own calculations using the Calculator.

Using Standard Mathematical Functions

With DIAdem ANALYSIS, you can perform mathematical functions on your data. To find the average (mean) of the minimum and maximum temperatures, complete the following steps:

Note If you have not completed the exercise from Chapter 3, *Viewing and Editing Data*, load the data set `Data3.TDM` located in `DIAdem Demo`.

1. Select the **DIAdem ANALYSIS panel**.
2. Right-click **Data2** in the Data Portal and select **New Group** from the shortcut menu.
3. Click **Rename**.
4. Rename **Group_0** to **Results** and click **OK**.
5. Right-click **Results** and select **Set Default Group** from the shortcut menu. The default group Results now appears in bold in the Data Portal.
6. Click **Basic Mathematics** in the group bar.
7. Click **Average Channels** in the function bar.
8. Select **T_min** in the Data Portal.
9. Press <Ctrl> and select **T_max**.
10. Drag and drop the selected channels into the **Channels to be averaged** field in the **Averaging of multiple channels** dialog box.
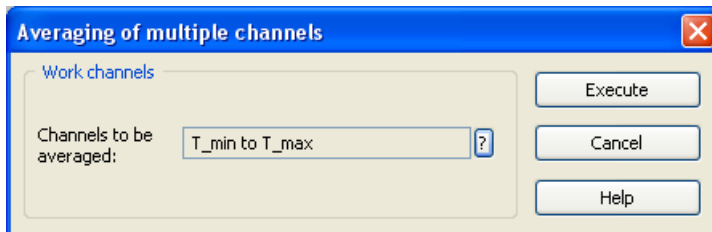
Figure 4-1. Averaging Minimum and Maximum Temperatures

11. Click **Execute**.

✏️ **Note**   After you click **Execute**, DIAdem displays the input and result channels from the calculation in the workspace.

12. Right-click **Mean_values** in the Data Portal and select **Edit**.
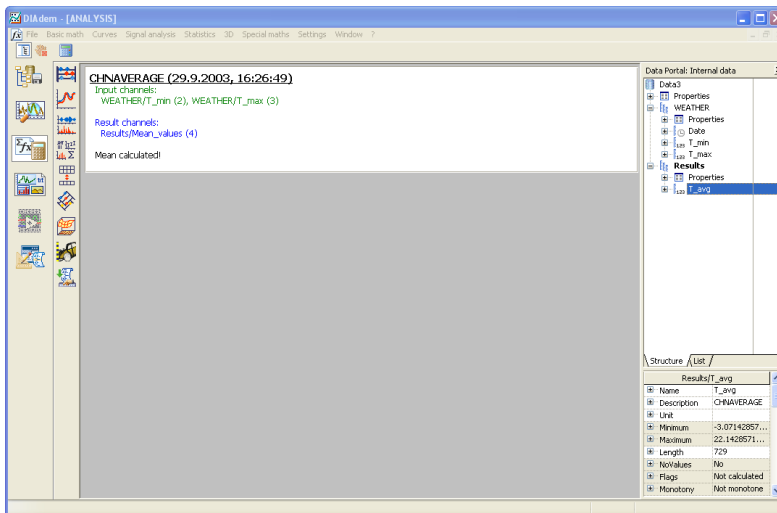
13. Enter T_avg as the channel name and press <Enter>.

Figure 4-2. Calculating with Standard Mathematical Functions

Calculating Formulas with the Calculator

Use the Calculator in DIAdem to perform your own mathematical operations. To convert the average temperature from °C to °F, complete the following steps:

1. Click **Calculator**.

2. Enter the following formula in the **Edit** area of the calculator:
   ```
   Ch('T_avg_F') :=  (Ch('T_avg') * 1.8) + 32
   ```
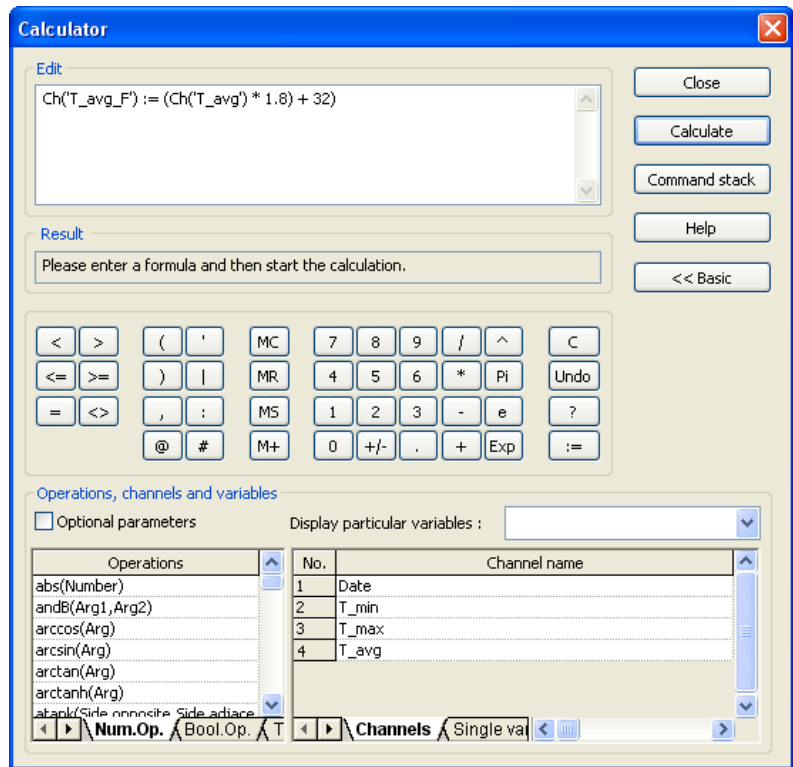

Figure 4-3. Calculating Formulas with the Calculator

3. Click **Calculate**.

4. Click **Close**. The new data channel, T_avg_F, appears in the Data Portal.

Summary

The following topics are a summary of the main concepts that you learned in this chapter.

Mathematical Functions

DIAdem ANALYSIS offers you a variety of functions for analyzing your data. You assign data channels to the function and then execute it. DIAdem stores newly calculated data in a new data channel.

Default Group

In the Data Portal, DIAdem deposits each result channel of a calculation in the default group. By configuring the default group, you choose where to save results. DIAdem labels the default group in bold.

Result Channels

After performing calculations in DIAdem ANALYSIS, the results appear in new data channels. This enables you to evaluate your data without deleting the existing data channels. You can also choose to overwrite existing data channels.

Calculator

The Calculator allows you to create your own formulas for analyzing your data. From simple arithmetic to advanced scientific and engineering formulas, use the Calculator to examine your data.

5

Creating a Report

With DIAdem REPORT, you create reports for your data. Different objects can be added to a worksheet in DIAdem REPORT, including two-dimensional and three-dimensional axis systems and tables, polar coordinate plots, text, and variables, as well as graphics files. With DIAdem REPORT you can make informative reports.

Creating a New Layout

To create a new layout, complete the following steps:

Note If you have not completed the exercise from Chapter 4, *Analyzing Data Mathematically*, load the data set Data4.TDM located in DIAdem Demo.

1. Select the **DIAdem REPORT** panel.

2. Click **New**.

3. Click **2D Axis System** in the group bar.

4. Click **2D Axis System with Grid** in the function bar.

5. Size the axis system by dragging the small square blocks on the edges of the axis system with your mouse cursor.

6. Select the channel **Date** from the Data Portal.

7. Press <Shift> and select the channel **T_avg** from the Data Portal.

Note When selecting the data channels, you must select the data channel **Date** first.

8. Drag and drop the data channels into the axis system.

9. Double-click the axis system.

10. Select **Legend**.

11. Click **OK**.

12. Click the legend and move it within the worksheet.

13. Size the legend by dragging the small square blocks on the edges of the legend with your mouse cursor.
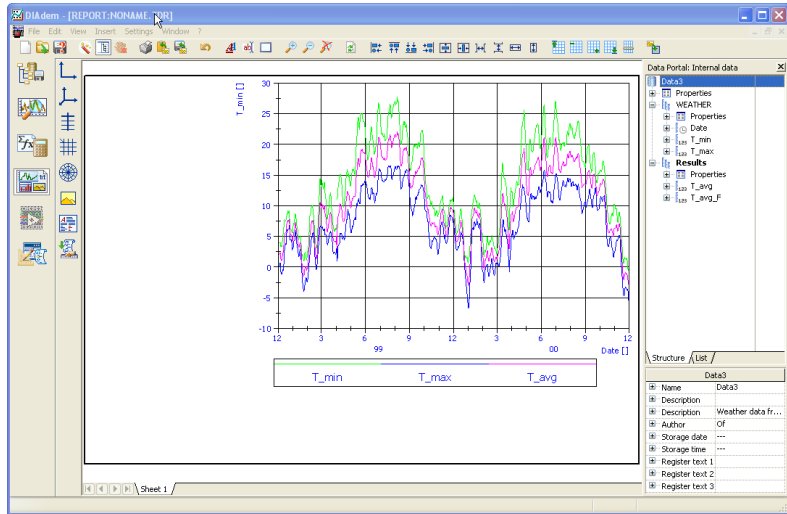

Figure 5-1. Inserting an Axis System with a Legend into a Worksheet

Adding Graphics to Your Layout

You can enhance the appearance of your worksheet by adding graphics and company logos. To add a graphic to your worksheet, complete the following steps:

1. Click **Graphics** in the group bar.

2. Click **Load Graphics** in the function bar.

3. Choose `Weather1.bmp` in the `..\DIAdem 9.0\Demo\Gra` folder and click **OK**.

4. Click the mouse button on the graphic and drag the graphic anywhere you want in the worksheet.

5. Size the graphic by dragging the small square blocks on the edges of the graphic with your mouse cursor.

Labeling Your Report

You can add text to the worksheet to explain the information shown in the report. To label your presentation, complete the following steps:

1. Click **Text**. The cursor changes to a text cursor.

2. Click the position in the worksheet where you want to add your text input.

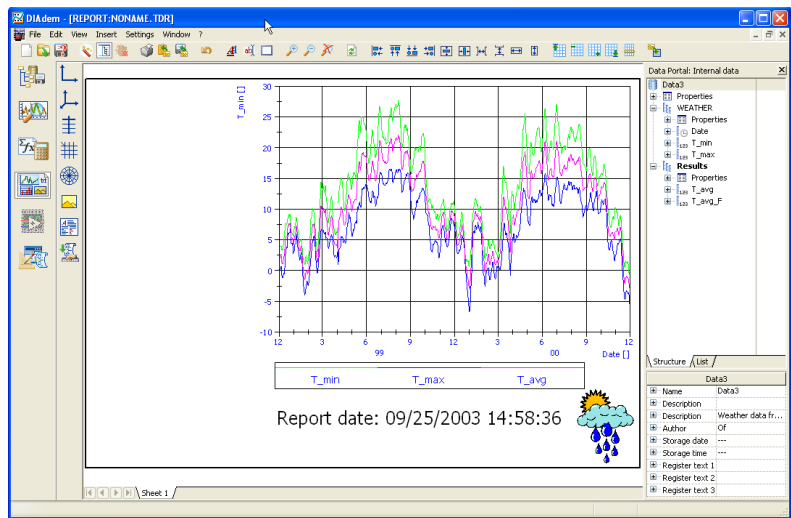3. Enter the following text: `Report date: @CurrDateTime@` and press <Enter>.

Figure 5-2. Labeling a Report with Variable Information

Inserting a Table

Complete the following steps to insert a table into your worksheet:

1. Click **2D Table** in the group bar.

2. Click **2D Table with Horizontal and Vertical Separators** in the function bar.

3. Click the mouse button on the table and drag the table anywhere you want in the worksheet.

4. Size the table by dragging the small square blocks on the edges of the table with your mouse cursor.

5. Select the channel **Date**.

6. Press <Ctrl> and select the channel **T_Avg**. Drag and drop the selected channels into the first column of the table.

7. Double-click the table.

8. Select the first channel and click **Col. Display**.

9. Enter the format #mm/dd/yyyy.

10. Click **OK**.

11. Select the second channel and click **Col. Display**.

12. Enter the format d.d.

13. Click **OK** twice.
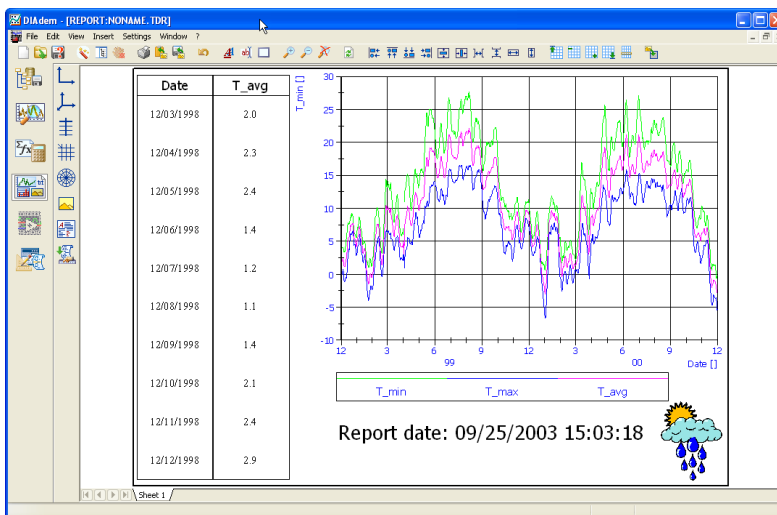
14. Click **Data Portal** to hide the Data Portal.

Figure 5-3. A Finished Report

Making a Template

You can reuse this layout for additional temperature reports. To use this layout with other data sets, complete the following steps:

1. Click **Save Layout As**.

2. Enter the filename Report2.TDR and click **Save**. After saving the layout, you can use it with any data file that has a similar structure.

Summary

The following topics are a summary of the main concepts that you learned in this chapter.

Layouts

The layout is saved separately from the data channels. Use the layout as a template for data files with a similar structure.

Reports

When you fill a layout with data, you create a report. A report can contain several worksheets.

Worksheets

You can add axis systems, graphics, text, and tables to your worksheet. Add data to the worksheet by dragging and dropping data channels from the Data Portal into axis systems and tables.

In addition to selecting data channels from the Data Portal, you can also add data channels by double-clicking in an axis system or table.

Axis Systems

An axis system allows you to display data channels as curves in a report. Each axis system can accommodate up to 250 curves.

Tables

Use tables to show important channel data in your layout numerically.

Graphics

You can also customize layouts with graphics and company logos. DIAdem supports a number of different graphic formats including BMP, JPEG, and TIFF.

Text

You can add text to your layouts. Text can be text you enter as well as information provided from variables such as the filename and the current date. These variables are updated each time you redraw your report.

6

Creating and Using Scripts

With DIAdem SCRIPT, you can create scripts to automate sequences in DIAdem. A script is basically a macro that you can extend to include programming structures, user-defined variables, and dialogs.

Creating a Script

In order to create a script, you have to start recording. To record a script, complete the following steps:

1. Select the **DIAdem SCRIPT** panel.

2. Click **Enable Recording Mode** to start recording the script.

    DIAdem SCRIPT prompts you to enter the script author and comments. It places these items directly into the script code to help you identify the script in the future.

3. Enter DIAdem User for the **Author** and First Script for the **Comments**.

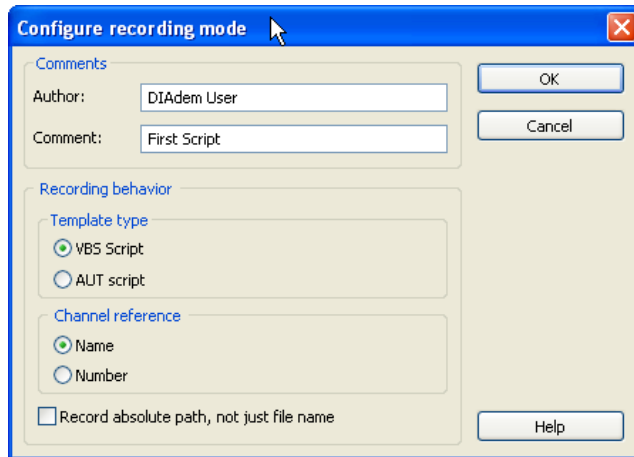4. Select **VBS Script** for the **Template Type**.

5. Click **OK**.

Figure 6-1. Configuring the Script Recording Mode

Recording a Script

The recording mode saves all the actions that you complete interactively in a script. To record actions in a script, complete the following steps:

1. Select the **DIAdem NAVIGATOR** panel.

2. Click **Delete internal data** in DIAdem NAVIGATOR to clear the Data Portal.

3. Click **Load data**.

4. Choose the data set `Data1.tdm` in the `..\DIAdem 9.0\Demo\Dat` folder and click **Load**.

5. Select **DIAdem ANALYSIS**.

6. Click **Basic mathematics** in the group bar.

7. Click **Average Channels** in the function bar.

8. Click **?** in the **Averaging of Multiple Channels** dialog box.

9. Press <Shift> and select **T_min** and **T_max**.

10. Click **Execute**.

11. Select the **DIAdem REPORT panel**.

12. Click **Load Layout**.

13. Select the layout `Report2.tdr` and click **Open**. The screen automatically updates to show the data set you have just loaded.

14. Select the **DIAdem SCRIPT** panel.
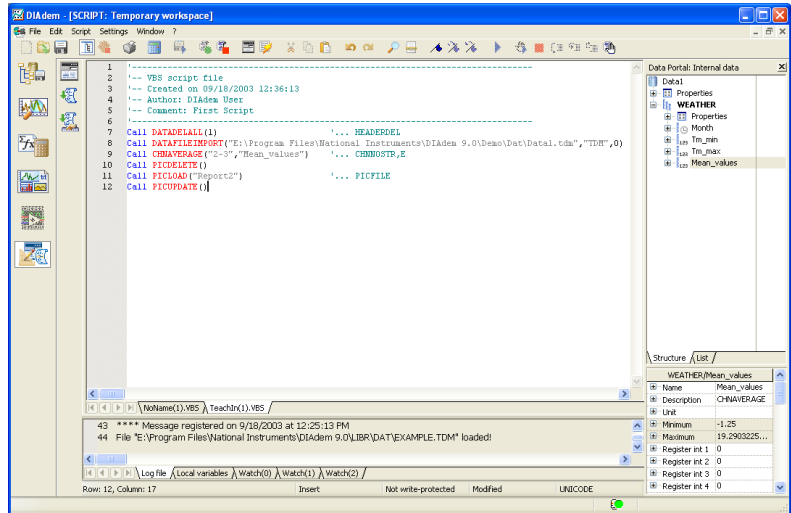
15. Click **Disable Recording Mode**.

16. Click **OK**.

Figure 6-2. Recording a Script

17. Click **Save file as**.

18. Enter the name `Script.VBS` and click **Save**.

Running a Script

Now that you have recorded a script, complete the following to test the results:

Click **Run Script**. Notice the time displayed in the report refreshes each time you run the script.

Summary

The following topics are a summary of the main concepts that you learned in this chapter.

Scripts

Scripts allow you to execute a series of commands for loading data, analyzing data, and creating a report, using Visual Basic Script (VBS).

Recording Scripts

After you click **OK** in the **Configure Recording Mode** dialog box, the text **Recording mode is enabled** appears in the status bar. This indicates that you have successfully started recording your script. Every DIAdem command you perform will be recorded in the script file. Click **Disable Recording Mode**, to stop recording a script.

Script Editor

The script editor displays header information and code for your script. DIAdem SCRIPT displays the actions that you perform while the recording mode in DIAdem SCRIPT is activated in the script editor. Use the debugger in the script editor to work through scripts step by step and to find errors.

Running Scripts

When you execute a script, the script performs all the actions you performed while recording commands.

7

Linking Data to Videos and Models

DIAdem CLIP and DIAdem INSIGHT help you visualize test data in combination with videos and 3D models.

Creating a Video Scene

All the available data types are in the Data Window on the right of the DIAdem CLIP screen. In the workspace, you create scenes using videos, DIAdem data, and axis systems.

Note DIAdem CLIP is an external program you must install separately from DIAdem.

To create a scene in DIAdem CLIP, complete the following steps:

1. Start **DIAdem CLIP**.

   A prepared layout appears in the workspace with one video area, one axis system area, and one picture area.

2. Click the **Videos** tab in the Data Window.

3. Drag and drop the **frontcrash.avi** video into the video area.

   The video was recorded during a crash test.

4. Click the **DIAdem Data** tab in the Data Window.

5. Click **+** next to **frontcrash**.

6. Press <Ctrl> and select all the data channels.

7. Drag and drop the selected data channels into the axis system.

8. Click the **Picture File** tab in the Data Window.

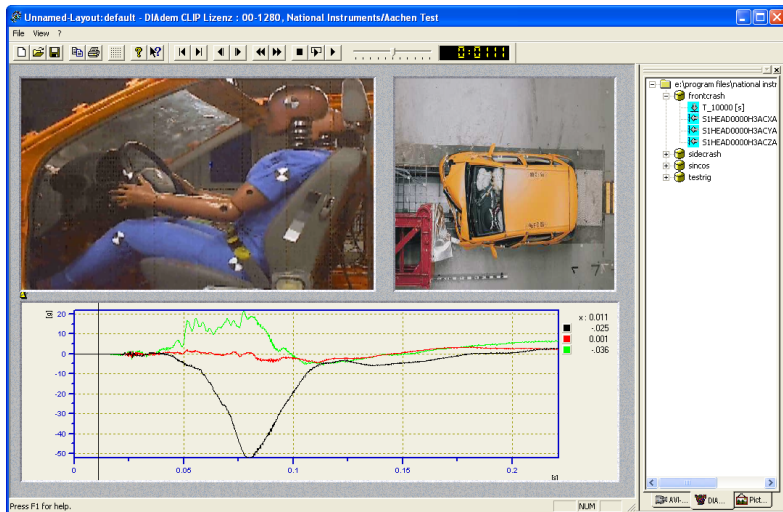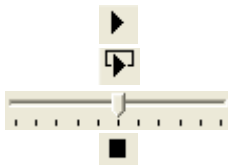9. Drag and drop **fcrash.jpg** into the picture area.

Figure 7-1. DIAdem CLIP Scene of a Front Crash Test

Evaluating a Video Scene

Once you have created a scene, you can correlate the measurement data with the video. To evaluate your videos and data, complete the following steps:

1. To run the evaluation, click **Play Once**.

2. To run the evaluation repeatedly, click **Play Continuously**.

3. Move the Speed slider to adjust the playback speed.

4. Click **Stop**.

5. Click in the axis system, click the mouse button and move the line cursor, for more detailed examination. When you keep the line cursor stationary, the video synchronizes automatically.

   The axis system legend shows the measurement values you point to with the line cursor.

Creating a 3D Model Scene

With DIAdem INSIGHT, you project measurement data onto a model of a measurement object. The measured values are displayed as color shading, deformation, or size changing in your 3D model.

Note DIAdem INSIGHT is an external program you must install separately.

In the following exercise, you assign data to a metal plate with temperature sensors mounted at regular intervals. To assign data channels to the model, complete the following steps:

1. Start **DIAdem INSIGHT**. In the workspace you see a prepared layout with a model area.

2. Click the **Models** tab in the Data Window.

3. Drag and drop **plate.mod** into the model area.

4. Click the **DIAdem files** tab in the Data Window.

5. Click **+** next to open the `plate` data set.

6. Drag and drop the data channel **Temp_1** to a model point on a grid line intersection. The model points are indicated by circles on the grid line intersections.

Note If you do not drag and drop a channel to a precise model point, a message appears for you to assign the channel again. You can zoom the model to see the model points better.

7. Select **Color** from the **Displaying Data As** dialog box.

8. Click **OK**.

9. Repeat steps 6 through 8 for data channels **Temp_2**, **Temp_3**, and **Temp_4**.

10. Press <Ctrl> and select the channels **Temp_1**, **Temp_2**, **Temp_3**, and **Temp_4**.

11. Drag and drop the channels into the axis system area.

12. Click the **Picture File** tab in the Data Window.

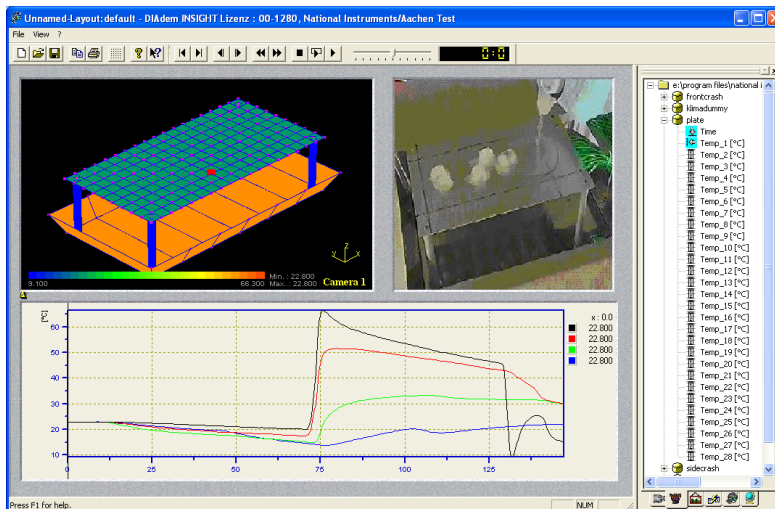13. Drag and drop **plate.jpg** into the picture area.

Figure 7-2. DIAdem INSIGHT Scene Projecting Temperatures on a 3D Model

Evaluating a 3D Model Scene

Once you have created the scene, you can compare the measurement data with the model simulation.

To evaluate the model and data, complete the following steps:

1. Click **Play once** to run the whole evaluation.
2. Click in the axis system and move the line cursor, for more detailed examination.

You can zoom, move, and rotate the model in the model window.

- *Zoom* the model with the right mouse button, moving the mouse horizontally at the same time.
- *Rotate* the model with the left mouse button.

Summary

The following topics are a summary of the main concepts that you learned in this chapter.

Scenes

A scene is composed of video, model, axis system, and picture elements.

Videos

Use videos that are recorded simultaneously with your measurement data to illustrate a test.

Models

Link the measurement signals to points on the 3D model where you acquired the data. You display the measured values on the model as color shading, deformation, or size changing.

Evaluations

After creating a scene, you can compare the measurement data and the videos. DIAdem CLIP and DIAdem INSIGHT offer two ways to perform your evaluation:

- *Automatically*, using the player bar. By running through the complete time channel you get an overview of the test.

- *Manually*, using the line cursor in the axis system. You can move from point to point in your graph to check critical or unclear ranges.

A

Technical Support and Professional Services

Visit the following sections of the National Instruments Web site at `ni.com` for technical support and professional services:

- **Support**—Online technical support resources include the following:

  - **Self-Help Resources**—For immediate answers and solutions, visit our extensive library of technical support resources available in English, Japanese, and Spanish at `ni.com/support`. These resources are available for most products at no cost to registered users and include software drivers and updates, a KnowledgeBase, product manuals, step-by-step troubleshooting wizards, conformity documentation, example code, tutorials and application notes, instrument drivers, discussion forums, a measurement glossary, and so on.

  - **Assisted Support Options**—Contact NI engineers and other measurement and automation professionals by visiting `ni.com/support`. Our online system helps you define your question and connects you to the experts by phone, discussion forum, or email.

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