KRASTA
Quick start guide 1.0

Kühne BSB GmbH

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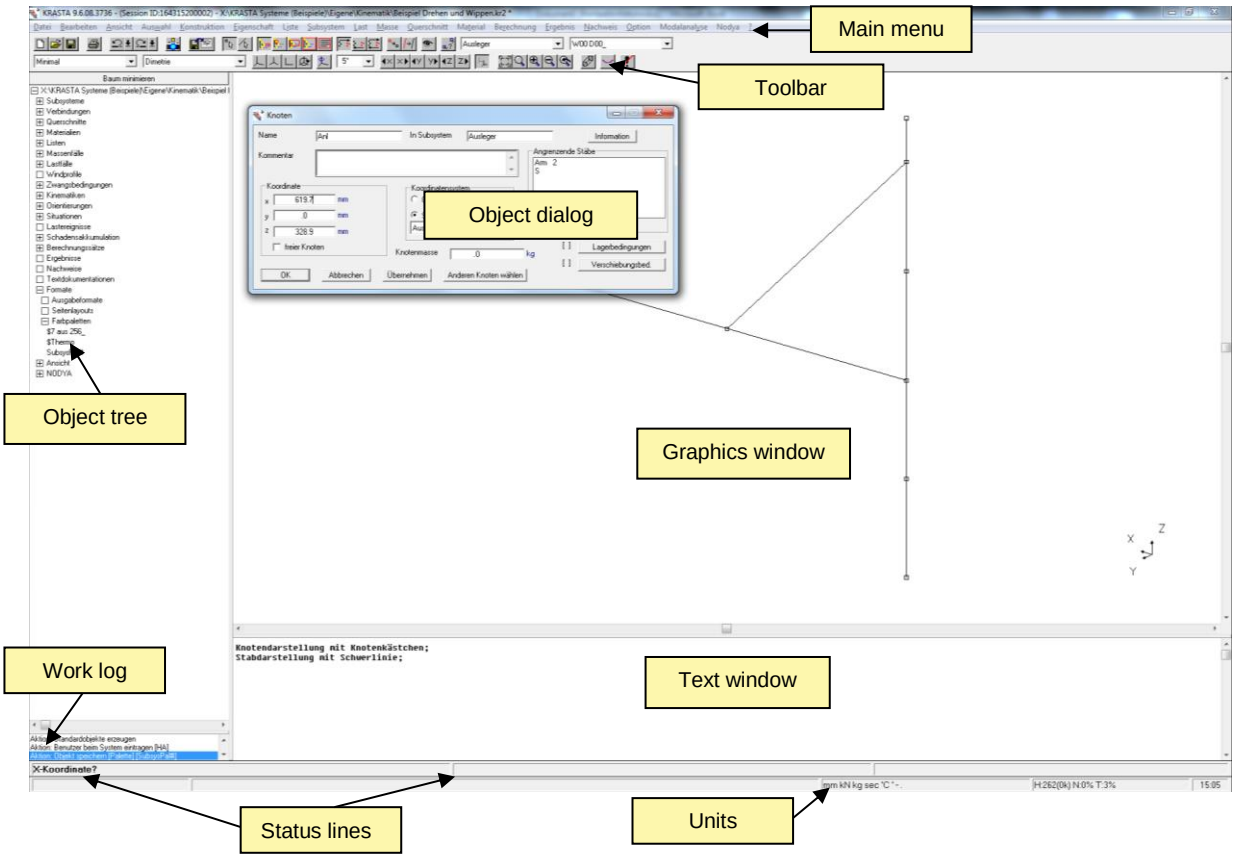
Date: 30.07.2014
Pages: 6

1 Basics

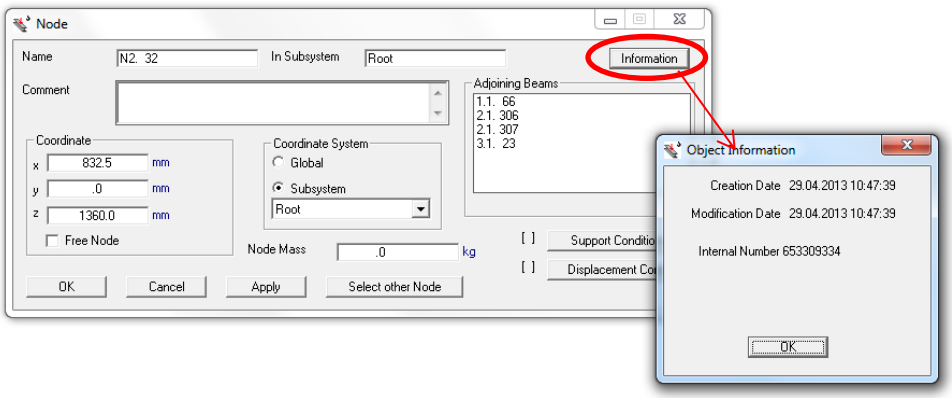
1.1 Screen



1.2 Objects, basic properties

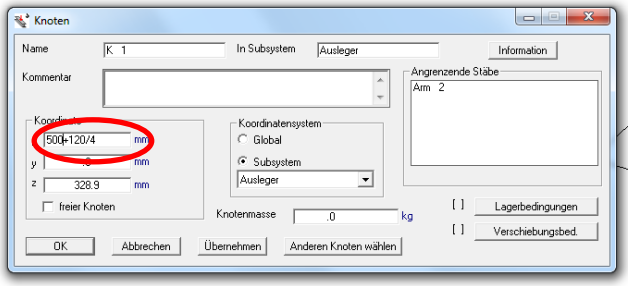
All objects in KRASTA have the following properties:

- Name, consisting of base name (16 alphanumeric characters) and number part (4 digits)
- Comment
- Internal number (reference number for internal database)
- Date of creation
- Modification date



1.3 Input with integrated calculator

Inputs for decimal values can be used as a calculator. The basic arithmetic operations (+, -, *, /) as well as the trigonometric functions sin(), cos() and tan() can be used.



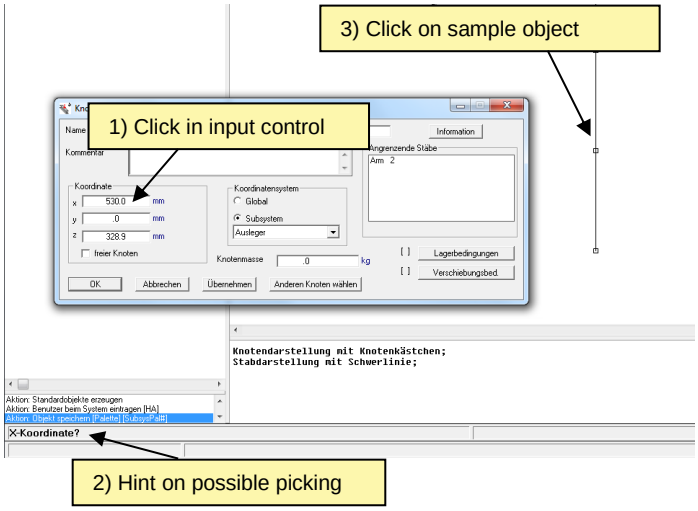
1.4 Input with decimal point, decimal colon or mixed

Decimal values can be entered with a decimal point, colon or mixed in formulae. Decimal values are always displayed with decimal point.

1.5 Picking of coordinates and properties

Coordinates and most nodal and beam properties can be picked from the graphics window. The working order is:

1) Click into the input control into which the property shall be copied
2) A hint in the status line is displayed
3) Click the sample object
4) The property is copied into the input control



2 Options

2.1 Units

Units can be changed at any time even when object dialogs are open.

Main menu:

Option > Units

2.2 Languages

The language can be changed at any time for the user interface (dialogs, menus etc.), result output and help file.

Main menu

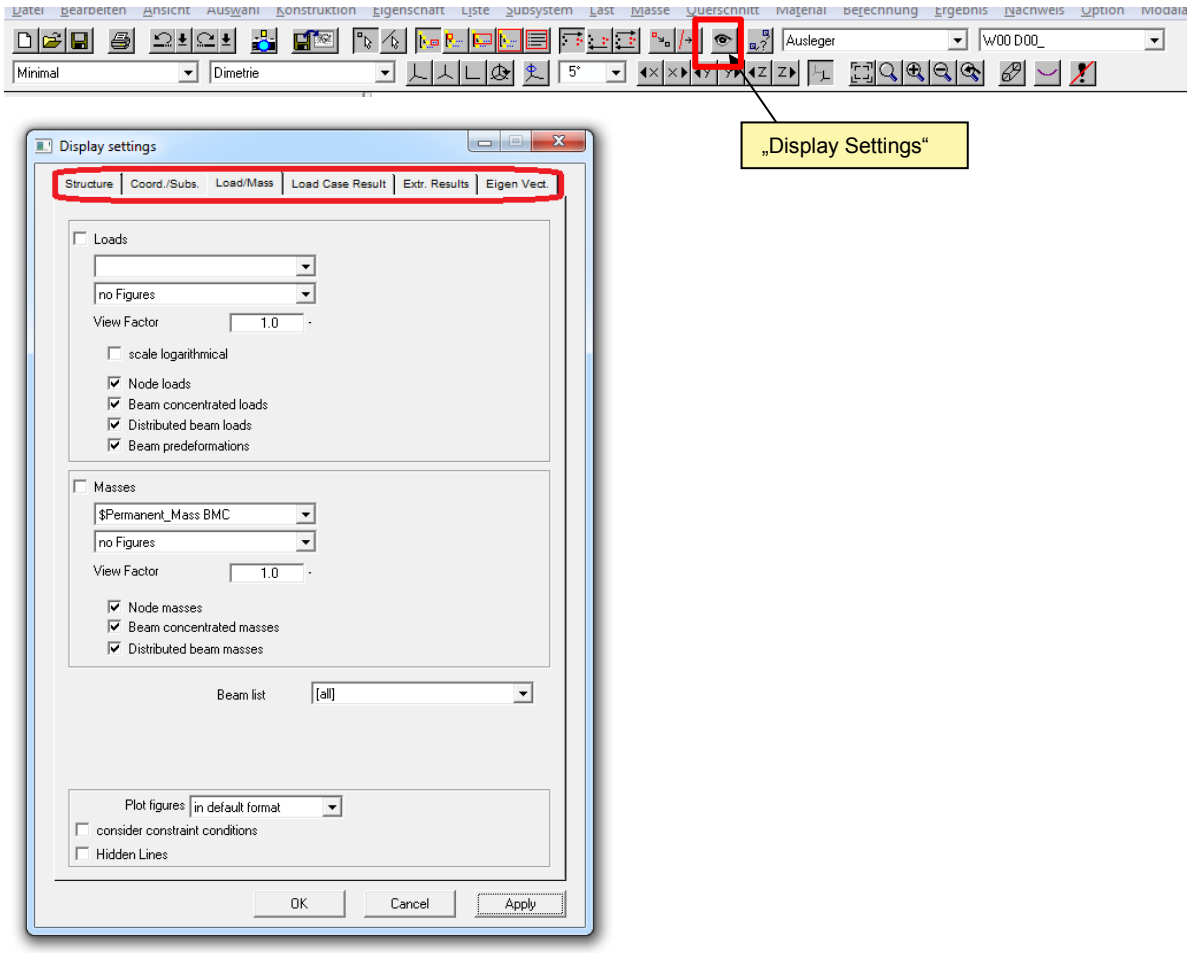
Option > Languages

2.3 Sizes of text and graphic elements, colors

The graphic display can be customized. Main menu:

Display > Screen
Display > Colors

3 Display settings



Click the button "display settings" and activate the desired options. The corresponding information is displayed in the graphics window. That way you can check the structure of your model in the graphics window and verify geometry and applied masses/loads.

4 Modeling

4.1 Create Nodes

Menu:

Construction -> (Nodes) New...

4.2 Create Beams

Menu:

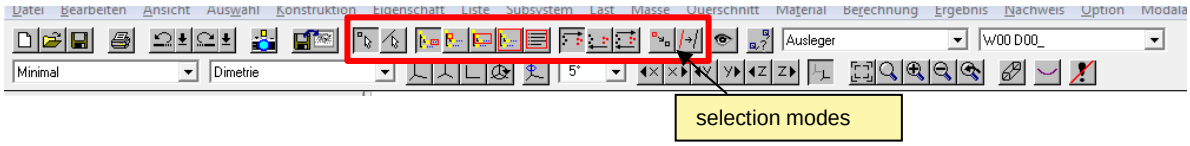
Construction -> (Beams) New...

4.3 Toolbar

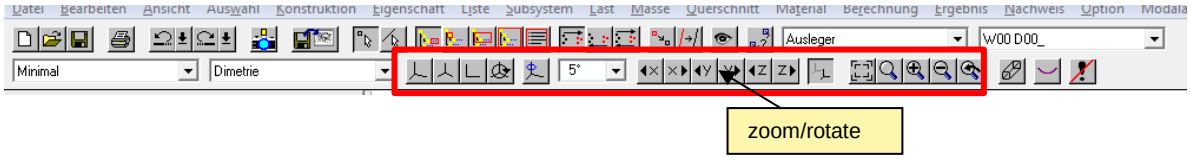
Activate the according selection mode for beams or nodes for further steps. In KRASTA you may select, unselect or invert beams and nodes by clicking in the graphic window. The corresponding buttons to change the selection mode can be found in the first button row.

If available, the fifth mouse button toggles between node and beam selection.

Selection modes are also available via context menu when clicking in the graphics window with middle mouse button (scroll wheel).



You may rotate or zoom the display of the graphics window with the display buttons in the second button row. Dynamic rotation and zooming be activated by pressing and holding the CTRL-key (default, see menu “Option > Orbit-Settings…” for other options) while moving the mouse.



4.4 Set beam properties

Select the beams for which you would like to set beam properties and select the according menu item in the "property" menu. A beam needs at least an auxiliary vector (defines the local y-axis), material and a cross section. You need to import or create cross sections (see "cross section" menu).

If you need results within the beam, you need to define section points. Without additional section points, results are available for the ends of a beam only.

Use the copy and move commands from the "construction" menu where possible.

4.5 Define support conditions

Support conditions are nodal properties, see the "property" menu.

4.6 Define masses and loads

Create new basic mass and load cases. Masses and loads are usually applied to "lists" of beams and nodes and not to beams and nodes directly.

We recommend inputting masses where possible and accelerate them in load cases where applicable. Inertia loads need not be calculated manually as mass cases can be accelerated according to the mode of operation of the device (dead load, drive acceleration, lifting, slewing, …)

4.7 Create load pattern

Create combination and logic load cases according to the desired evaluation pattern.

4.8 Calculate the model

Execute the calculation suite "PAS linear" for a linear calculation.

4.9 Check the calculation log

Select the menu item "Calculation" -> "Show log file..." and scan the log for errors and warnings. Error codes are explained in the manual.

4.10 Display load case results

Activate the corresponding options in the dialog "display settings" to display results for basic and combination load cases.

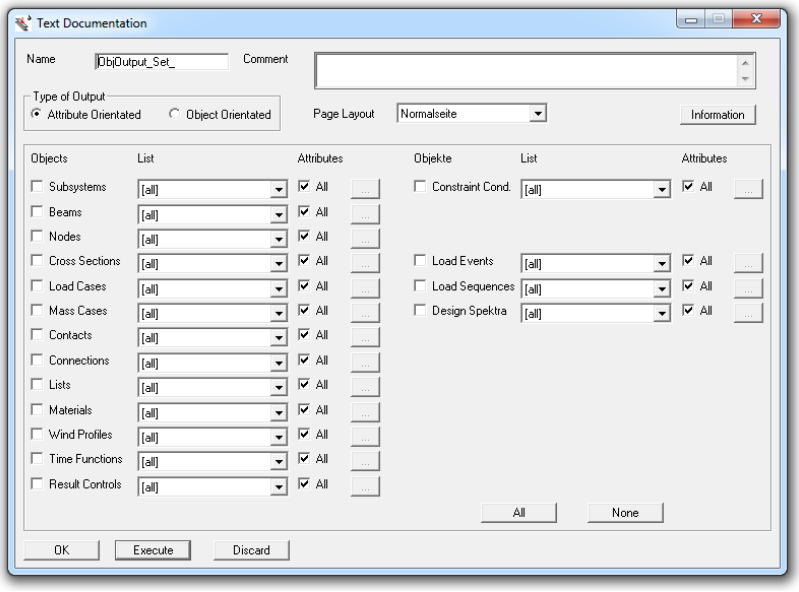
4.11 Proofs and results

Stress results, result extremation and proofs of fatigue are available through results and proofs. Create new results and proofs as desired with the corresponding menu items "result" and "proof".

5 Text documentation

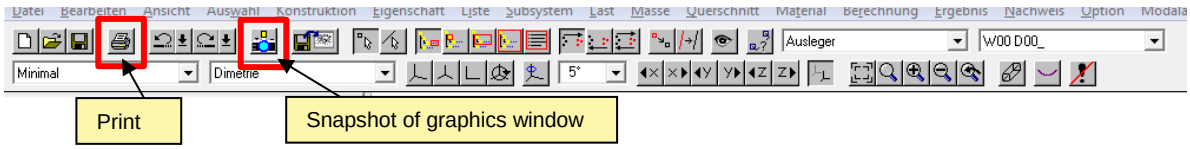
Menu:

File > Text Documentation > New…



Most objects relevant for structure, mass and load can be output as text files. Select the desired objects, choose an object list and select the amount of output details (object attributes).

6 Printing



Text and plot files may be saved for later printing. They may also be sent to the standard printer from the text window or the snapshot dialog without saving the file for later printing. In the print dialog saved text and plot files may be arranged for printing in the proper order.

Texts and plots can also be transferred to external text and image processing software via the clipboard (copy&paste).