



## Description of New Features and Bug Fixes at Version 4.03a

			<b>Description</b>
1	Bug Fix	Load Cases	Previously adding and removing compliant load cases caused data loss from the default load cases. This has been fixed.
2	New	Asymmetry	The option is now available to have different hard point geometry positions on the right and left hand sides. This option is enabled at the 'File / New' dialogue box.
3	Bug Fix	Ackermann	The Ackermann calculation has been corrected for calculation at the zero steer point.
4	New	Kinematic Sum	Added a display to list the weighted summation of all kinematic graph deviations of data to user results. This concept has also been extended to form the basis of an internal optimiser, (see later notes).
5	New	Construct lines	New graphical elements added that draws the front view and side view instantaneous centres and their construction lines. These illustrate classical IC construction methods.
6	Bug Fix	SDF	Previously listing the SDF file whilst in Roll or Steer articulation mode caused a problem. This has been resolved.
7	Bug Fix	Group Create	When creating a new points group in full vehicle mode the wrong point's list was presented. This has now been fixed.
8	New	Optimiser	Using the new kinematic sum as a basis for scoring the complete suspensions response to change, an internal optimiser has been added that allows point position, bush stiffness and bush orientation to be optimised relative to a set of defined criteria.
9	New	Settings display	A new dialogue box has been added to provide a single point of access to a large number of display solver settings. This single display source is opened either via the data menu or via the Ctrl+S shortcut.
10	Bug Fix	Ackermann plotting	The Ackermann graph curves didn't update during a 'drag' event except when in 'steering' mode this has been corrected.
11	New	Bush Pre-loads	Previously the compliant bushes did not include at each increment the pre-load due to the kinematic rotation from the initial ride point. This can now be optionally included, (see solver menu options).
12	New	Graphics types	New dimensional graphics types have been added. These allow users to define distance arrows between points, point to line, point to plane and line to line. These are added to the template graphics and editable in exactly the same way as all template graphics.
13	New	Twist Beam	A new template has been added that provides a kinematic equivalent model for a twist beam suspension. It utilises a hard point switch between bump motion and roll motion.



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| 14 | New | Graphics<br>Editing | The picking of screen graphics features has been extended to provide greater use of visual picking versus previous menu based selection. In any edit mode graphical elements can be selected and their relevant properties edited. |
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