Momentum – Vector Momentum Analysis

Computes Post impact information based on input pre-impact information (Linear Momentum in reverse).

Entry into Module:

This module of the program is normally entered by clicking on the **REC-TEC** block in the upper left of the **REC-TEC Window** causing the drop-down menu to appear. Place the cursor on the **Momentum** block and click on **Vector Momentum Analysis** on the sub-menu to initiate this module.

Under certain circumstances, the user may choose to use the **Files** block instead of the drop-down menu approach. Selecting any file with a **.VMO** extension in the **Dialog box** accessed from either the **Open Single File** or **Open Multiple Files** block opens this module.

Selecting **AutoLoad [ON]** from either the **Setup Menu** or the **AutoLoad Icon** on the upper right side (third line) of the **REC-TEC Window** automatically loads the scenario that was on the screen when the module was closed, either individually, or when the program was closed. With **AutoLoad [OFF]** on the main **REC-TEC Window,** modules will start without loading a file.

Data Entry:

This module contains the following data entry blocks within the leftmost frame:

Pre-Impact

- **Weight V1 –** Weight of Vehicle 1
- **Speed V1 –** Speed of Vehicle 1
- **Angle A1 –** Approach Angle of Vehicle 1

- **Weight V2 –** Weight of Vehicle 2
- **Speed V1 –** Speed of Vehicle 2
- **Angle A2 –** Approach Angle of Vehicle 2

Input 2 of 4 (Secondary Inputs)

- **Angle A3 –** Departure (Post-Impact) Angle of Vehicle 1
- **Angle A4 –** Departure (Post-Impact) Angle of Vehicle 2
- **Speed V3 –** Departure (Post-Impact) Speed of Vehicle 1
- **Speed V4 –** Departure (Post-Impact) Speed of Vehicle 2

Entry of specific (known) data in the data boxes sufficient to generate an answer causes output information to appear in the **Post-Impact – Zero Restitution** frame and in the **Resultant Data** frame if **Secondary Inputs** are entered. As the input data is changed,

the output data is automatically updated without the need to tell the program to update the output.

Output:

The output from this module consists of the departure **Speeds** and **Angles** not entered as input expressed in both the primary and secondary output configurations as selected in the **Setup > REC-TEC** menu.

Post-Impact (Unknowns)

- **Speed:** Post-Impact Speed (Primary)
- **Speed:** Impact Speed (Secondary)

- **eVelocity:** Coefficient of Restored System Velocity **(Restitution)**
- **rVelocity:** Coefficient of Retained System Velocity **(Vs/Vc)**

Options:

Several **Command Buttons** appear in a frame located at the lower right corner of the module Window. The **Command Buttons** allow the user to engage options including the option to **Open** and **Save** the data required to generate the scenario shown on the screen at the time the file was saved.

- **Open . VMO File –** Calls up a **Dialog box**, which **Opens** any pre-existing **.VMO** file and displays the output results.

- **Save . VMO File –** Calls up a **Dialog box**, which **Saves** data on the screen to files with any user-selectable filenames. This is independent of the automatic saving as "**LastFile.VMO**" of the data at the close of this module or the close of the program.

- **N** – This button toggles a graphical number pad on the screen that can be used to enter data into the input boxes without using your keyboard number pad. This may be useful for presentations as data entry can be accomplished using a wired/wireless mouse.