Acceleration FAQ

This page is devoted to **frequently asked questions** (FAQ) related to acceleration.

On this page:

General

What is the difference between relative and absolute acceleration?

ANSWER: Relative acceleration is within the reference frame local to the structure. Absolute acceleration is within a universal reference frame, and is given as the sum of relative acceleration and ground acceleration. The same *relative* and *absolute* designations also apply to velocity and displacement.

The Display > Show Plot Functions menu presents options for either relative or absolute acceleration.

Is acceleration load only applied to selected members?

ANSWER: No. CSI software automatically generates and envelopes a set of acceleration loads for translation along, and rotation about, each global axis. These acceleration loads are applied at each node and object to simulate ground motion during time-history and translation-only response-spectrum analyses.

Acceleration loads may be manually assigned to specific nodes and objects, then applied through a load case. Acceleration loads in the program are included as a percentage of gravity, g. Therefore, to manually assign acceleration loads to selected members, first divide the acceleration by g. Then enter the percentage in the Scale Factor box in the Loads Applied area of the Load Case Data form.

Formulation

How is acceleration load calculated and applied?

ANSWER: Please see the Acceleration loads article for response.

How is rotational-acceleration load calculated and applied?

ANSWER: Please see the Acceleration loads article for response.