

Envelope multiple load-case results

How do I envelope results to find the maximum forces from a series of load cases?

Extended Question: I am running several time histories for a large and complicated bridge structure. I would like to obtain the maximum forces which occur in each member. How should I post-process results to report maximum forces and the corresponding time step and load case?

ANSWER: The most efficient approach may be to use the software [OAPI](#). For example, the FrameForce API function, documented in the *CSI OAPI Documentation.chm* file, enables you to extract results for a desired [load case](#) and step type. To report the governing force for each member, create several nested loops which post-process results for each force type, member, load case, and time step.

A similar approach may be applied to tabular results using an alternate programming platform.