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% Calculates seismic force on nonstructural component per ASCE 7-22 Ch 13
% including required minimum and maximum limits.
%
% Equation:
%  $F_p = (0.4 \cdot a_p \cdot SDS / (R_p / I_p)) \cdot (1 + a_1 \cdot z / h) \cdot W_p$ 
%
% Limits:
%  $F_p \geq 0.3 \cdot SDS \cdot I_p \cdot W_p$ 
%  $F_p \leq 1.6 \cdot SDS \cdot I_p \cdot W_p$ 
%
% INPUTS
%  $a_p$  = component amplification factor
%  $SDS$  = design spectral acceleration
%  $R_p$  = component response modification factor
%  $I_p$  = importance factor
%  $z$  = component height above base
%  $h$  = building height
%  $W_p$  = component operating weight
%  $a_1$  = story factor
%
% OUTPUT
%  $F_p$  = design seismic force on component

%% Base equation

$$F_p = (0.4 \cdot a_p \cdot SDS / (R_p / I_p)) \cdot (1 + a_1 \cdot z / h) \cdot W_p;$$


%% ASCE limits
 $F_{p\_min} = 0.3 \cdot SDS \cdot I_p \cdot W_p;$ 
 $F_{p\_max} = 1.6 \cdot SDS \cdot I_p \cdot W_p;$ 

```