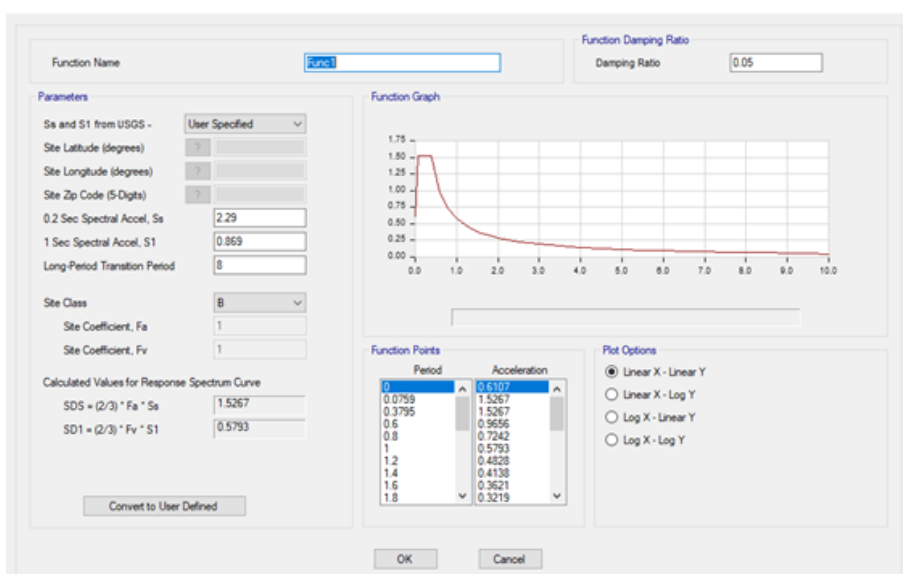


RESPONSE-SPECTRUM ANALYSIS

Response-spectrum analysis (RSA) is a linear-dynamic statistical analysis method, which measures the contribution from each natural mode of vibration to indicate the likely maximum seismic response of an essentially elastic structure. Response-spectrum analysis provides insight into dynamic behavior by measuring pseudo-spectral acceleration, velocity, or displacement as a function of structural period for a given time history and level of damping. It is practical to envelope response spectra such that a smooth curve represents the peak response for each realization of structural period.



Response-spectrum analysis is useful for design decision-making because it relates structural type-selection to dynamic performance.

Structures of shorter period experience greater acceleration, whereas those of longer period experience greater displacement. Structural performance objectives should be taken into account during preliminary design and response-spectrum analysis.