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Sommario/riassunto	Since the occurrence of earthquakes and their properties are very uncertain even with the present knowledge, it is too difficult to define reasonable design ground motions especially for important buildings. In the seismic resistant design of building structures, the concept of 'performance-based design' has become a new paradigm guaranteeing the maximum satisfaction of building owners. The quality and reliability of the performance-based design certainly depend on the scientific rationality of design ground motions. In order to overcome this problem, a new paradigm has to be posed. To the