Design Method for Seismic Control Devices Installed on Steel Railway Bridges

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Some authors of this paper have proposed a damping device with a bridge collapse prevention function installable in narrow spaces. In this paper, we propose a method for the rough design of the proposed device. Specifically, we organized the results of the nonlinear response analysis of a single degree of freedom system and proposed a nomogram that can be used to calculate the displacement of the girders and the response ductility factor of the piers in accordance with equipment specifications. By using this result, it is possible to have a rough idea of the specifications to meet the required performance before detailed dynamic analysis is carried out, so it is expected to reduce the amount of work involved in the detailed calculations.