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Proposal Of A Novel Connecting Control Method Utilizing A Tuned Mass Damper As Coupling Mechanism Applicable To Two Identical Structures

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This study deals with novel Connected Control Method (CCM) applicable to two identical structures. CCM is a method of structural vibration control utilizing interaction force between multiple structures connected by springs and/or dampers. Ordinary CCM is not effective to identical structures because no relative motion occurs among identical structures. In this paper, a novel CCM utilizing a Tuned Mass (TMD) Damper as coupling mechanism is presented. By putting TMD between two structures, inertial force of the auxiliary mass works as reaction forces for connecting dampers even applied to identical structures. Theoretical analysis and experimental evaluation using simple structural model are carried out and the effectiveness of the presented method is confirmed.