

Study on Inertial and Kinematic Interaction in the Pile Bent Structure

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Pile bent structures have no underground beam, so bending moment displacement between the pile and pier becomes continuous. Therefore it is considered that dynamic response characteristics of the pile bent are complexly affected by the displacement of the ground and the inertial force, but this inertial and kinematic interaction is unclear. In this paper, the inertial and kinematic interaction acting on the pile bent structures is studied by nonlinear time-history dynamic analysis. As a result, it is revealed that the moment due to the inertial force is dominant on the pier and the pile which is located at a small depth, and the displacement of the ground has an influence on not only the moment at the pier but also that at the pile.