عنوان مقاله:

MOVING LOAD ANALYSIS OF SUBMERGED FLOATING TUNNELS

محل انتشار:

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خلاصه مقاله:

The concept of floating submerged tunnels becomes increasingly attractive idea to cross the straits. The structural solution in these bridges includes buoyancy force on tunnel body plus tension inmooring tethers. This paper investigates the effect of submergence on the dynamic response of submerged floating tunnels due to moving load. The inertial effect of the fluid on the submerged structure is accounted for by evaluating the added mass in deep and shallow waters. Then the effect of moving load velocity on the dynamic amplification factor for mid span displacement is evaluated. Theresults show that while the inertial effect of fluid reduces the critical velocity, closely spaced tethers provides a means to increase this velocity and could be used to control the moving load effect. Although increasing the tether stiffness increases the critical velocity, at the same time it results in the escalation of the impact factor.

کلمات کلیدی:

Fluid-structure interaction; Floating submerged tunnel; Moving load; Added mass;Shallow water