**عنوان مقاله:**

ANALYTICAL FREQUENCY MODELING OF A FLEXIBLE MECHANISM WITH IMPERFECT JOINT

**محل انتشار:**

بیست و ششمین همایش سالانه بین المللی انجمن مهندسان مکانیک ایران (سال: 1397)

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**خلاصه مقاله:**

In this paper, a methodology is presented to detennine the instantaneous transverse natural frequencies and mode shapes of the coupler of a slider-crank mechanism with asingle clearance joint between the coupler and the slider. This clearance joint changes the boundary conditions of the coupler which in turn affects its frequency equation andmode shapes. First of all, the flexible slider-crank mechanism with the clearance joint is modeled using absolute nodal coordinate formulation. Solving the equations of motion, the direction of the contact force at any time is determined. In the vibrational analysis, the contact is replaced with a linear spring and then having found the stiffness component normal to the undeformed coupler. the ltansverse lnodc shapes and natural frequencies are analytically found.

**کلمات کلیدی:**

absolute nodal coordinate fonnulation,boundary condition. clearance, mode shape. Instantaneous natural frequency

**لینک ثابت مقاله در پایگاه سیویلیکا:**

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