

Aplikasi Tendon Aktif berdasarkan Logika fuzzy pada Perkuatan Jembatan Rangka Baja

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20303745&lokasi=lokal>

Abstrak

The major problem in serviceability degradation of steel truss bridge is interaction of moving vehicle load with the bridge 's upper structure. One of the improvement efforts is to strengthen the bridge system by using eternal pretension tendon. Pretension tendons with polygonal, kingpost and horizontal configuration are designed as an active control equipped with the actuator. Based on adaptive control technique, fuzzy logic algorithm was used to activate the tendon control in the bridge as a Fuzzy Logic Control feedback (FLC feedback) system, where the change of control force can be set to be proportionalbr adaptable to the displacement. From the simulation with various cable configurations, with various velocities of continuous and discontinuous vehicle models, and various types of tendons, it shows that the Kingpost tendon configuration has a better performance to reduce the displacement of the bridge 's upper structure and to minimize tensile stresses at bottom chord element.