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Monitoring and Analysis of Bridge Crossing Ground Fissures

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Abstract : Ground fissures can be seen in some cities all over the world. As a special urban geological disaster, ground fissures in Xi'an have caused great harm to infrastructure. Chang'an Road Interchange in Xi'an City is a bridge across ground fissures. The damage to Chang'an Road interchange is the most serious and typical. To study the influence of ground fissures on the bridge, we established a bridge monitoring system. The main monitoring items include elevation monitoring, structural displacement monitoring, etc. The monitoring results show that the typical failure is mainly reflected in the bridge deck damage caused by horizontal tension and vertical dislocation. For the construction of urban interchange spanning ground fissures, the interchange should be divided reasonably, a simple support structure with less restriction should be adopted, and the monitoring of supports should be strengthened to prevent the occurrence of beam falling.

Keywords : bridge monitoring, ground fissures, typical disease, structural displacement
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