

**Study of the Effect of Track Irregularity Prevention Methods
for the Transition Zone between Different Track Structures**

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At the transition zones between ballastless track and ballast track, it is a common knowledge that track irregularity becomes locally discontinuous; therefore, hanging sleepers are likely to occur. As a countermeasure for local track irregularity, the authors have developed the track structure, which uses automatically irregularity-correcting sleepers as termed AICS. Since the AICS is a sleeper, which itself adds to its height automatically even if ballast deforms, rail subsidence is accordingly preventable. On the other hand, there are some examples that the track irregularity seems to be decreased by installing a certain amount of elastic sleepers at the transition zone in service lines; however, the quantitative effect verification has not been performed. In this paper, the authors performed the cyclic loading tests with full-scale track models, which simulated transition zones. The authors, thereby, clarified that the AICS has superior prevention effect for hanging sleeper and that the elastic sleeper has some degree of the efficacy.