

**Method of Evaluating Ride Comfort Reflecting Passengers' Subjective Sensation
to High Frequency Vibration**

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According as the speed of Shinkansen trains increases, it has become clear that high frequency vibration in the region of 30 Hz influences ride comfort. However, with respect to the equivalent sensitivity curve used to calculate the current ride comfort level, sensitivity to high frequency is too low, which means that it has a weak weighting factor. The problem therefore, is that with respect to this type of high frequency vibration, the present calculation method will produce a result which does not match with the ride comfort evaluated by the passengers' subjective sensation.

Therefore, a survey was carried out to examine the sensitivity depending on the vibration in the range of 1-50Hz, with a focus on the ride comfort. Based on this survey result, a new equivalent sensitivity curve which reflects passengers' subjective sensation more closely has been developed by modifying the high frequency range of the existing equivalent sensitivity curve. The effectiveness of the new proposal has been examined with test subjects on board the commercial Shinkansen rolling stock and a vibrating test bench. This has confirmed that the ride comfort level evaluated by the proposed new equivalent sensitivity curve is a closer reflection of the ride comfort evaluated by passengers' subjective sensation.