ACOUSTICS2008/3326
Hand-arm equal sensation curves for steering wheel translational and axial vibration

Mickael Sauvage, Elise Gressant, Olivier Lescop and Vincent Roussarie
PSA Peugeot Citroën, Centre Technique de Vélizy, Route de Gisy, 78943 Vélizy-Villacoublay, France

The aim of the study was to determine the hand-arm equal sensation curves for steering wheel translational and axial vibration. A sensory panel of 10 trained judges performed a two-step procedure. The test stimuli used were sinusoidal vibrations in the range from 4 to 60 Hz, with amplitude of 0.2 m/s^2 rms. The first step was to determine perceived sensations for each frequency. Four families of vibration were defined (pumping movement, shaking sensation, trembling sensation and prickling sensation). The second step was a three-down-one-up test based on these families to determine the equal sensation level. Results showed that perceived intensity depends on vibration family, frequency and excitation direction (translational or axial).