

Perceptual studies of violin vibrato

C Fritz, J Woodhouse, BCJ Moore, I Cross
University of Cambridge

Pacs: 43.75.De Bowed stringed instruments, 43.66.Lj Perceptual effects of sound

Although it seems obvious to violinists that vibrato has a large influence on the perception of violin tone quality, published studies of violin vibrato have mainly concerned its influence on the sound from a scientific point of view, i.e. the characterisation of its time-frequency properties. Work will be described to explore the link between the perception of vibrato notes, the extent of frequency modulation and the level of damping of the resonance modes of the violin. Damping influences the “peakiness” of the frequency response function. The test methodology is based on liveliness ratings and triadic comparisons, where subjects have to select the most similar and the most different pair in each triad (presentation of three sounds). The sounds of the corpus are synthesised using sawtooth waves with frequency modulation, whose amplitude is varied, filtered through a set of admittances corresponding to a reference violin and two modified violins, one with the damping of all modes increased, the other one with the damping decreased.