

COMPARING RECORDED AND SIMULATED MUSICAL INSTRUMENT SOUNDS: PERSPECTIVES FOR A PERCEPTUAL EVALUATION

Alejandro Osses V., Armin Kohlrausch
Eindhoven University of Technology, Netherlands
a.osses@tue.nl
a.kohlrausch@tue.nl

ABSTRACT

To better understand the properties of a musical instrument, a common practice is to compare its recordings in controlled situations with a computational model that attempts to recreate such situations. In this study we present perceptual criteria we applied to evaluate the so-called hummer in two acoustic conditions, with and without first-order reflections. The hummer is a plastic corrugated tube that produces a clear pitch sensation when rotated at specific speeds. Our evaluation was based on estimates of the perceptual descriptors of loudness, loudness fluctuation, roughness and fundamental frequency. We discuss why we chose those descriptors, which limitations our analysis had and what aspects we consider important in order to extend this approach to the evaluation of other musical instruments.