

Some studies on the understanding the different tones quality in a Bonang set

ABSTRACT

The acoustic spectra were carried out on a bonang set by investigating the vibration overtones. The spectra were measured from a set of just-tuned cast bronze bonang from Indonesia (low octave bonang barung and high octave bonang penerus). The bonang was beaten with padded mallets. The acoustic spectra were recorded by PicoScope oscilloscopes. Picoscope reading are in good agreement with those from Melda analyser in Cubase version 9. Only bonang barung 2 show a greater frequency increase in the first overtone frequency (only 10% deviant from the octave). Bonang penerus 1, 4 and 5 and bonang barung 3 showed an octave from the second overtone frequency (with only 5% deviant from the octave). Bonang penerus 3, 4 and 5 sustained 3 peaks (fundamental, first overtone and second overtone frequency) from the beginning until $t=1.5s$. Since the two types of bonang give different data on the harmonic and pitch, therefore, the aim of the study is to identify the similarities and differences of harmonic, pitch and size as well as the functions based on tuning of the Bonang Penerus and Bonang Barung in Malay and Javanese gamelan ensemble.

Keyword: Acoustic spectra; Bonang barung; Bonang penerus; Vibration overtone