

## Horizontal Directivity of Pipa Radiation

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**Abstract :** Pipa is one of the most important Chinese traditional plucked instruments, but its directivity has never been measured systematically. In western, directivity of loudness for western instruments is deeply researched through analysis of sound pressure level, whereas the directivity of timbre is seldom studied. In this paper, a new method for directivity of timbre was proposed, and horizontal directivity patterns of loudness and timbre of Pipa were measured. Directivity of Pipa radiation was measured in an anechoic room. The sound of Pipa played by a musician was recorded simultaneously by 32 microphones with Pipa in the center. The measuring results were examined through listening test. According to the measurement of Pipa directivity radiation, we put forward the best localization of Pipa in the Chinese traditional orchestra and the optimal recording region.

**Keywords :** directivity, Pipa, roughness, listening test

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