Massey University
Te Kunenga ki Purehuroa

NATURAL SOUNDS

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ABSTRACT

Natural sounds, as one of the most important resources of nature, have attracted attention from many researchers. Although, psychological approaches, acoustical approaches and psychoacoustical approaches have been employed on the research of natural sounds, not many analytical investigations have been conducted on specific natural sounds except for the biological natural sounds.

The aim of this study is to present the properties and reveal the generation mechanisms of the selected natural sounds.

This thesis concentrated on studying the characteristics of various specific natural sounds by acoustical approach. Field recording has been mainly adopted for the collection of sound samples. For the selected samples, computational analyses were conducted to investigate the attributes of the sounds. Sound signatures including waveform, frequency spectrum and sonogram were displayed to visualize the analyzed signals. The generation mechanisms were reviewed and discussed to reveal the variables that contribute to the sound characteristics.

Sound samples including cavity wind sound, aeolian sound, wind sound through vegetation, thunder clap, thunder rumble, thunder crack, plunging breaker sound, spilling breaker sound, rock wave sound, boiling mud pot sound, geyser eruption sound, fumaroles eruption sound and different bubble sounds were selected and analyzed to reveal their properties.

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