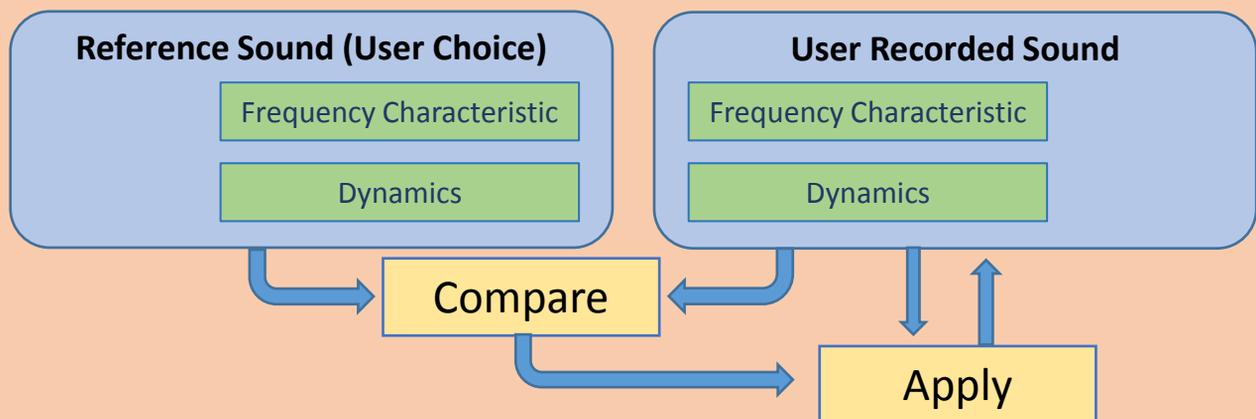# Automated Sound Mastering with Scene Detection

Introduction

The performance of computers are revolutionary improved recent days, which makes more capability to the users. We can record the voice, compose the music and engineer the sound even with the freeware. No exaggeration to say it is the past story that people had to buy the expensive gears to do that.

The Mastering – is the finalization process of the audio engineering. The sounds on the market is well processed by engineers. This "Auto Sound Mastering" is the project to help the people who want to make his/her sound to the commercial quality, without having deep knowledge about engineering.

How can be done?

The biggest problem of automation is that there are no absolute one answer in music. The color of the sound is very different per music and the age. To get around from this arguments, this project allows users to choose the destination of the mastering.

Reference Sound (User Choice)
- Frequency Characteristic
- Dynamics

User Recorded Sound
- Frequency Characteristic
- Dynamics

Compare

Apply

Although there are lots of things to adjust while the engineering, the most parts we should care are Loudness and Frequency Characteristics. The first step of this project is (1) Get and the characteristics from the audio data; (2) Compare the level and calculate the difference; (3) Apply the characteristics to the user recorded sound.

What is the Scene Detection and what is for?

When user wants to process the voice of one man, the way wrote above may work very well. However, when it comes to music, it is not so simple. The audio data is a mixed/merged data of every instruments. There are no assurance that all instruments make sounds from start to end; The characteristic of the sound is always changing. Comparing the characteristics between "Vocal + Guitar" and "Drum + Bass + Guitar" may cause bad result during the comparing.

To avoid those bad comparison, this project introduce the Music Scene Detection. The detection would find the similar scene between two sounds and offer the proper comparison for the better adjustment automations.