clc;

clear;

[audio,sampHz] = audioread('Guns-N\_-Roses-November- Rain origin.wav');

[P,Q] = rat(169/sampHz);

audiolow = resample(audio,P,Q); %重新采样

audiolow = audiolow(:,1); %取单声道

newaudiolow = rescale(audiolow,0,255);

RGB\_R = ceil(reshape(newaudiolow,141,643));%得到R矩阵

T = 1/100;%采样周期

number = length(audiolow);%样本数量

time = number\*T;%总时间

t = 0:T:time-T;%x坐标

%figure(2);

%subplot(211)

%plot(t,audiolow);%画出图形

%title('原始音频信号');xlabel('时间(s)');ylabel('幅度');

audiolowF = fft(audiolow);

%subplot(212)

%freq = (0:T:time-T)\*(100/time);

%plot(freq,20\*log10(abs(audiolowF)));

%title('频域');xlabel('频率');ylabel('幅度');

newaudiolowF = rescale(20\*log10(abs(audiolowF)),0,255);

RGB\_G = ceil(reshape(newaudiolowF,141,643));%得到G矩阵

audiolowFF = fft(audiolowF);

newaudiolowFF = rescale(20\*log10(abs(audiolowFF)),0,255);

RGB\_B = ceil(reshape(newaudiolowFF,141,643));%得到B矩阵

showRGB = cat(3,RGB\_R-149,RGB\_G-100,RGB\_B-110);

imshow(showRGB);