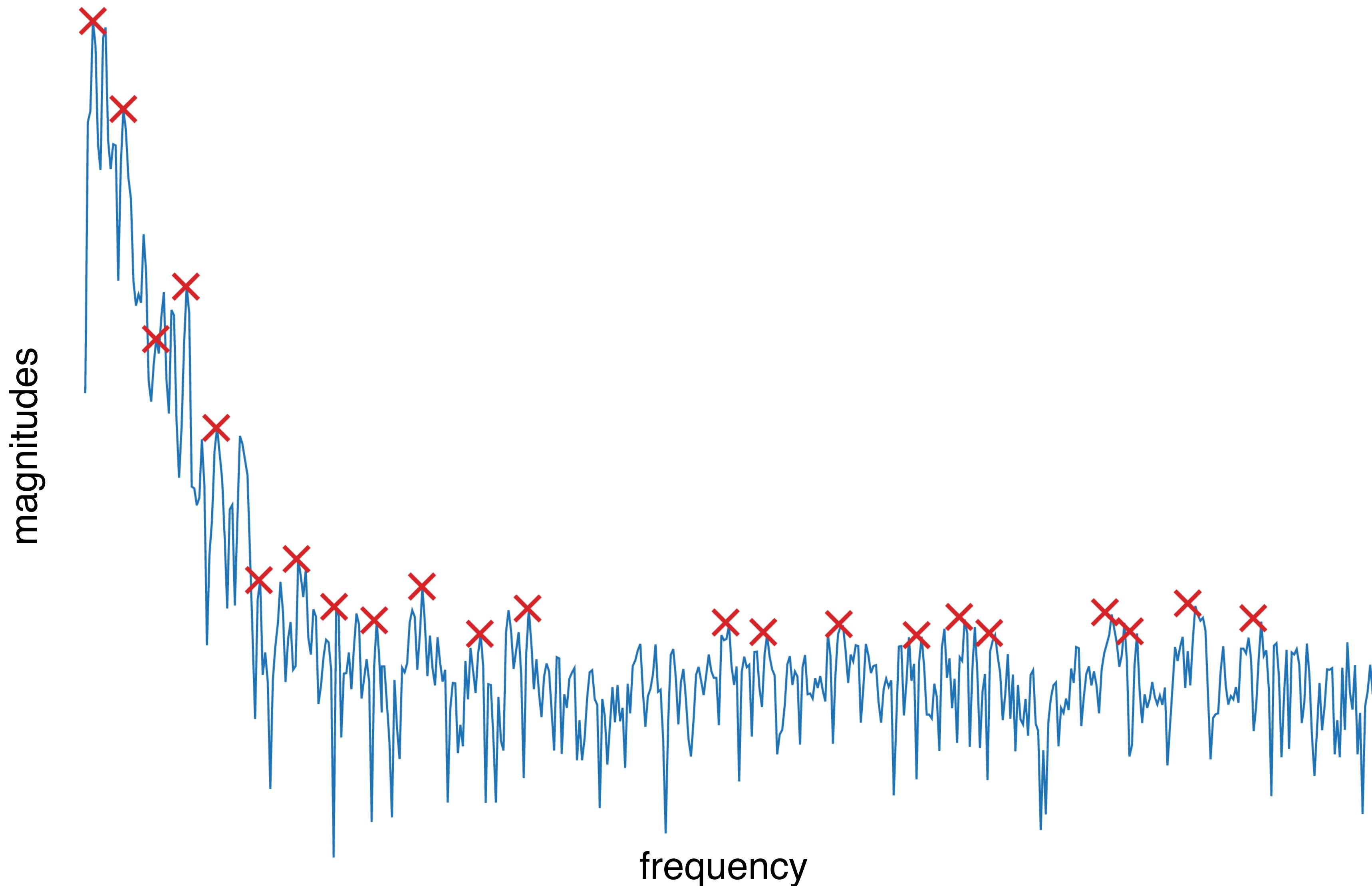


FluidSines

create a sinusoidal model of a signal

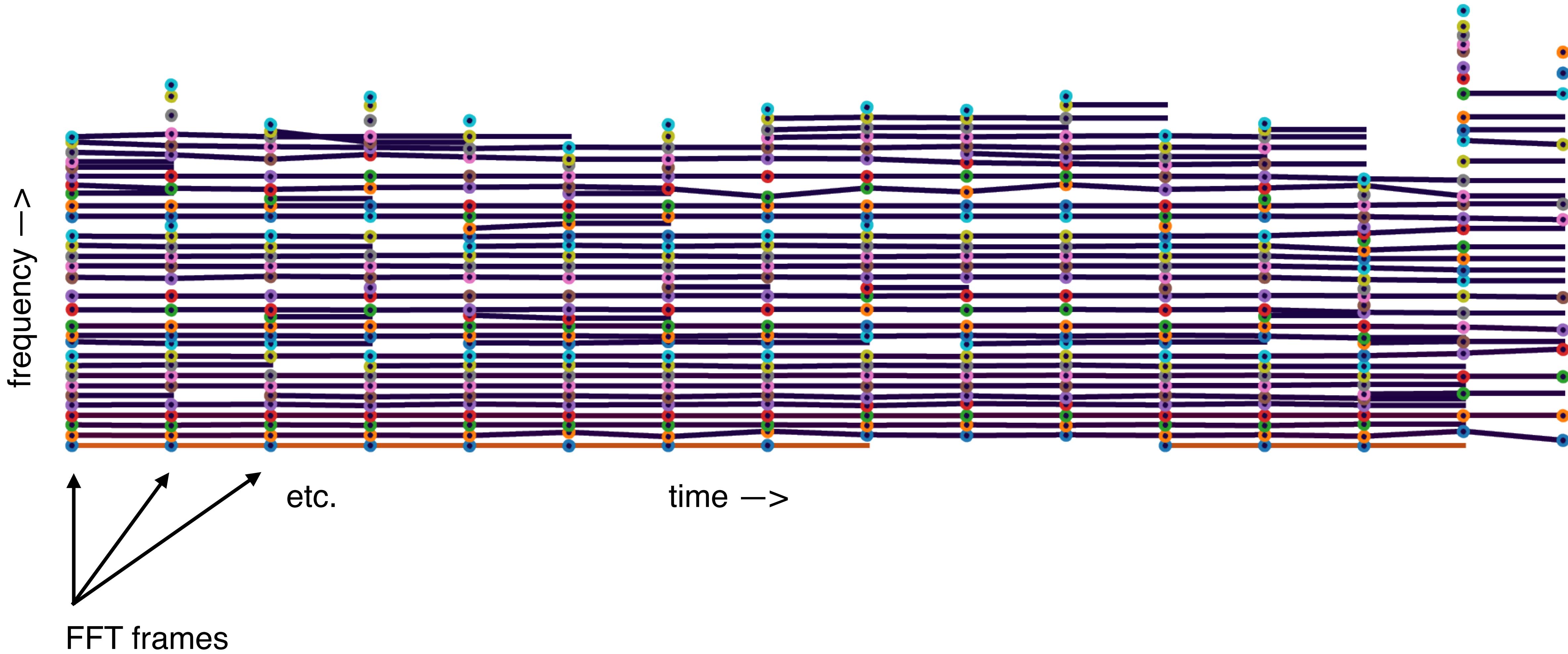
FluidSines

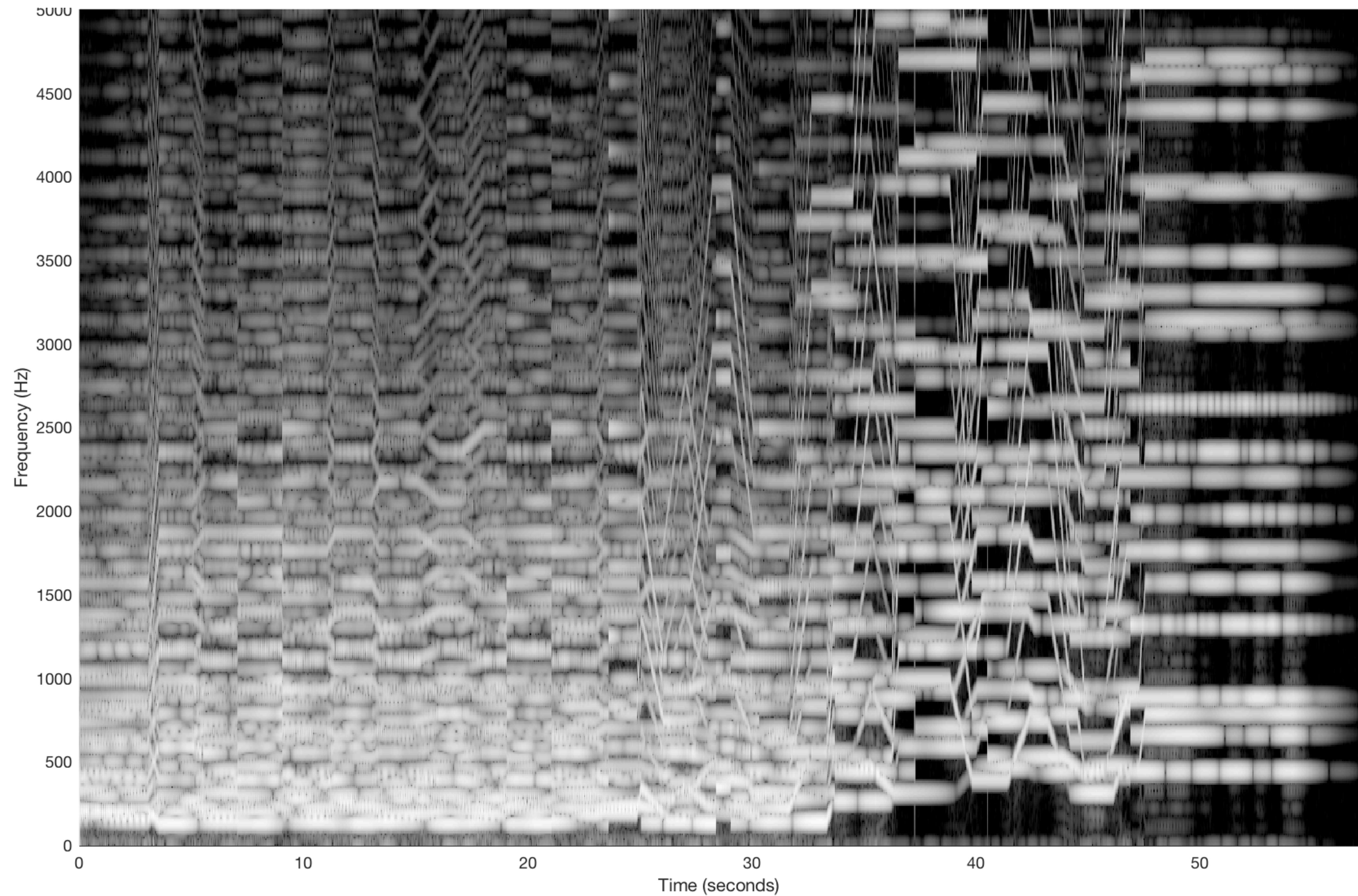
create a sinusoidal model of a signal

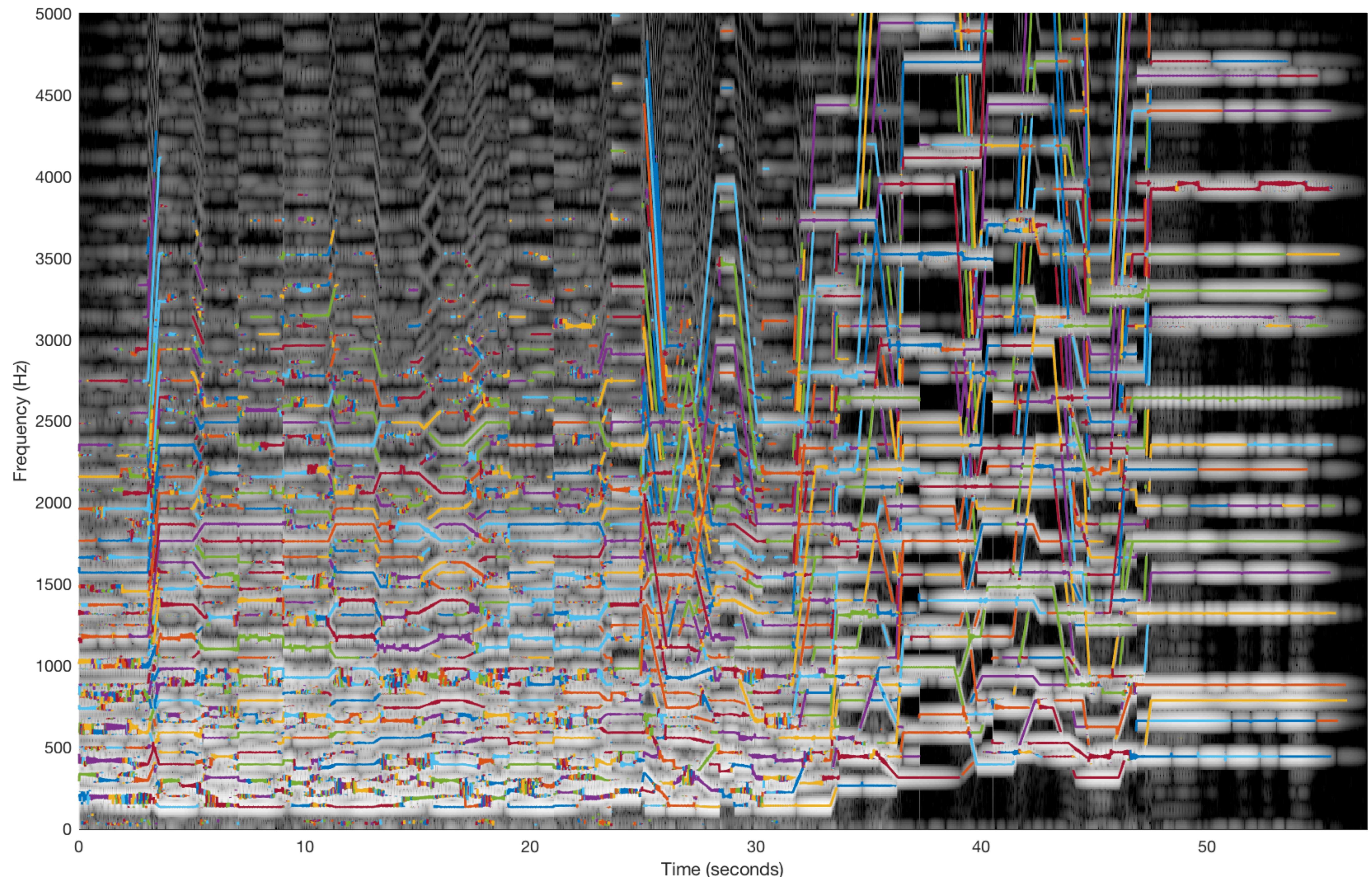


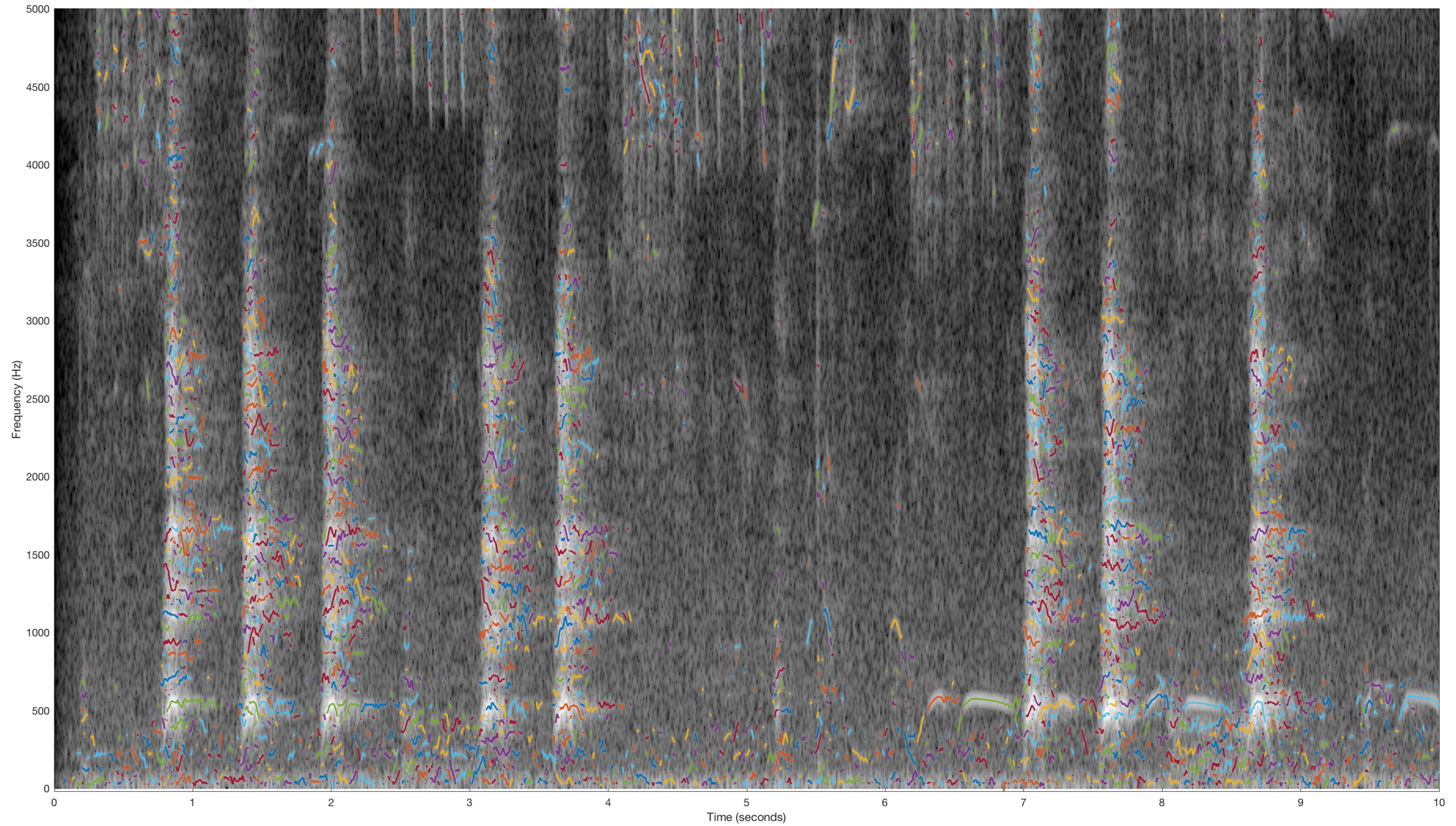
FluidSines

create a sinusoidal model of a real-time signal









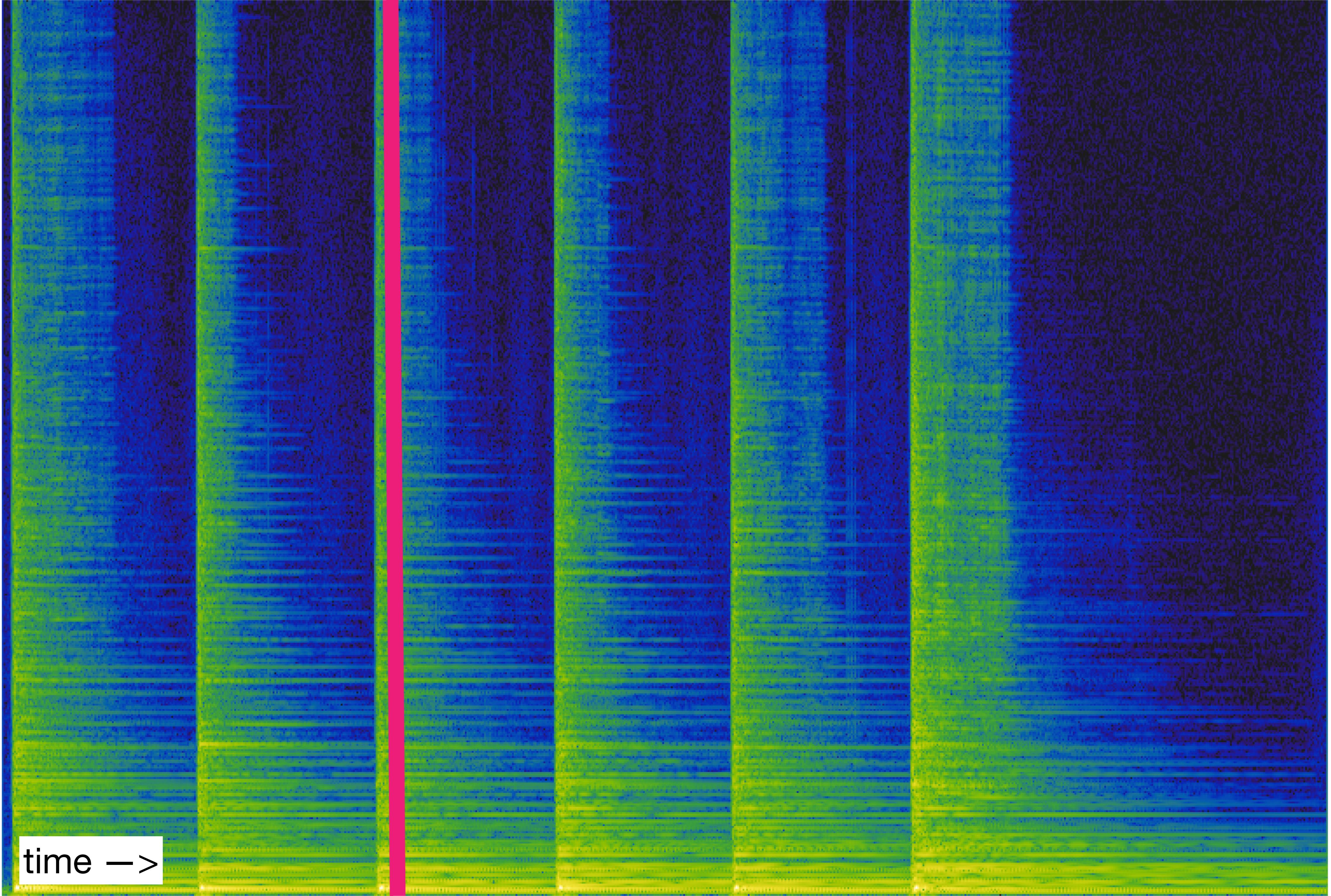
Harmonic-Percussive Source Separation

spectral decomposition



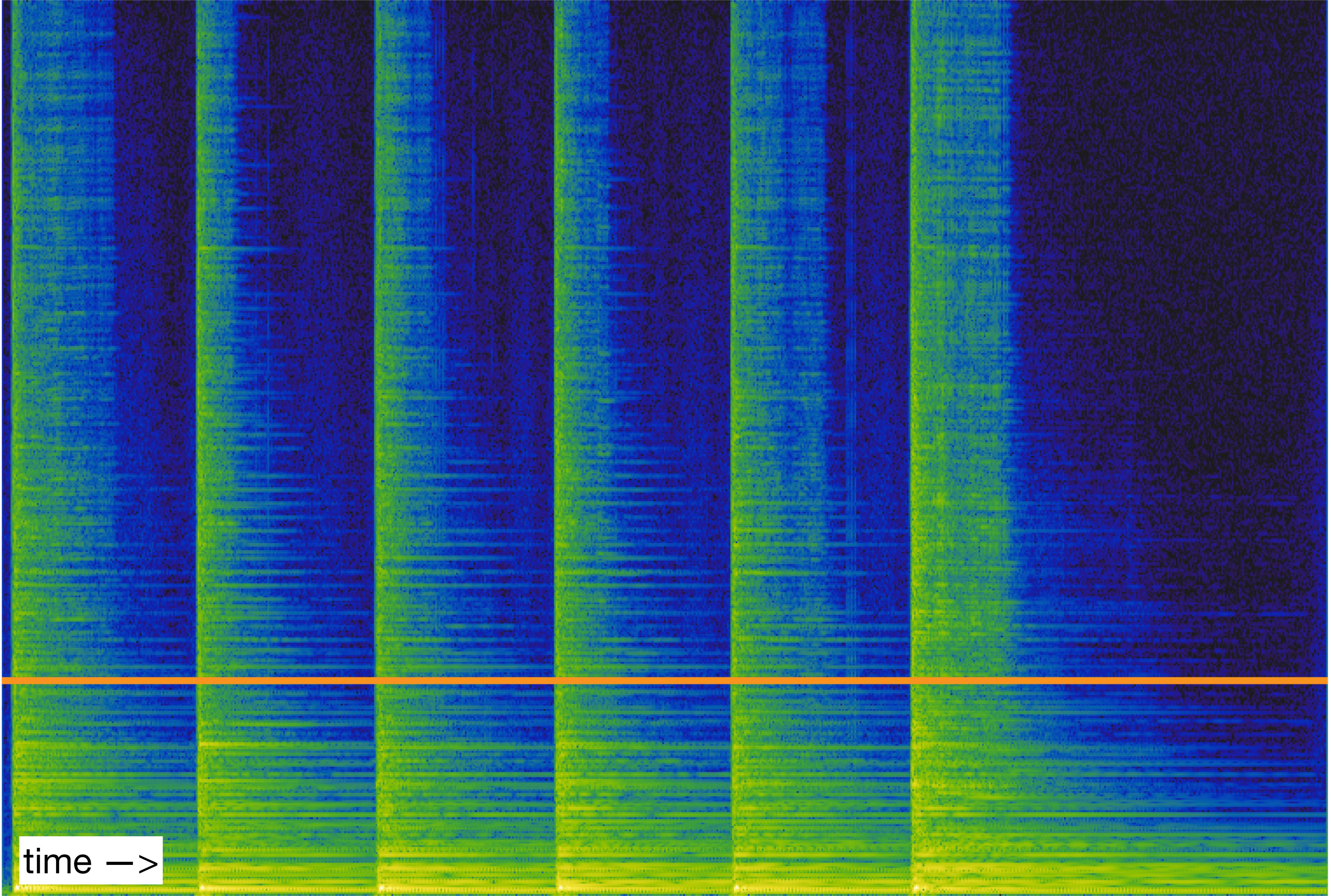
frequency →

time →



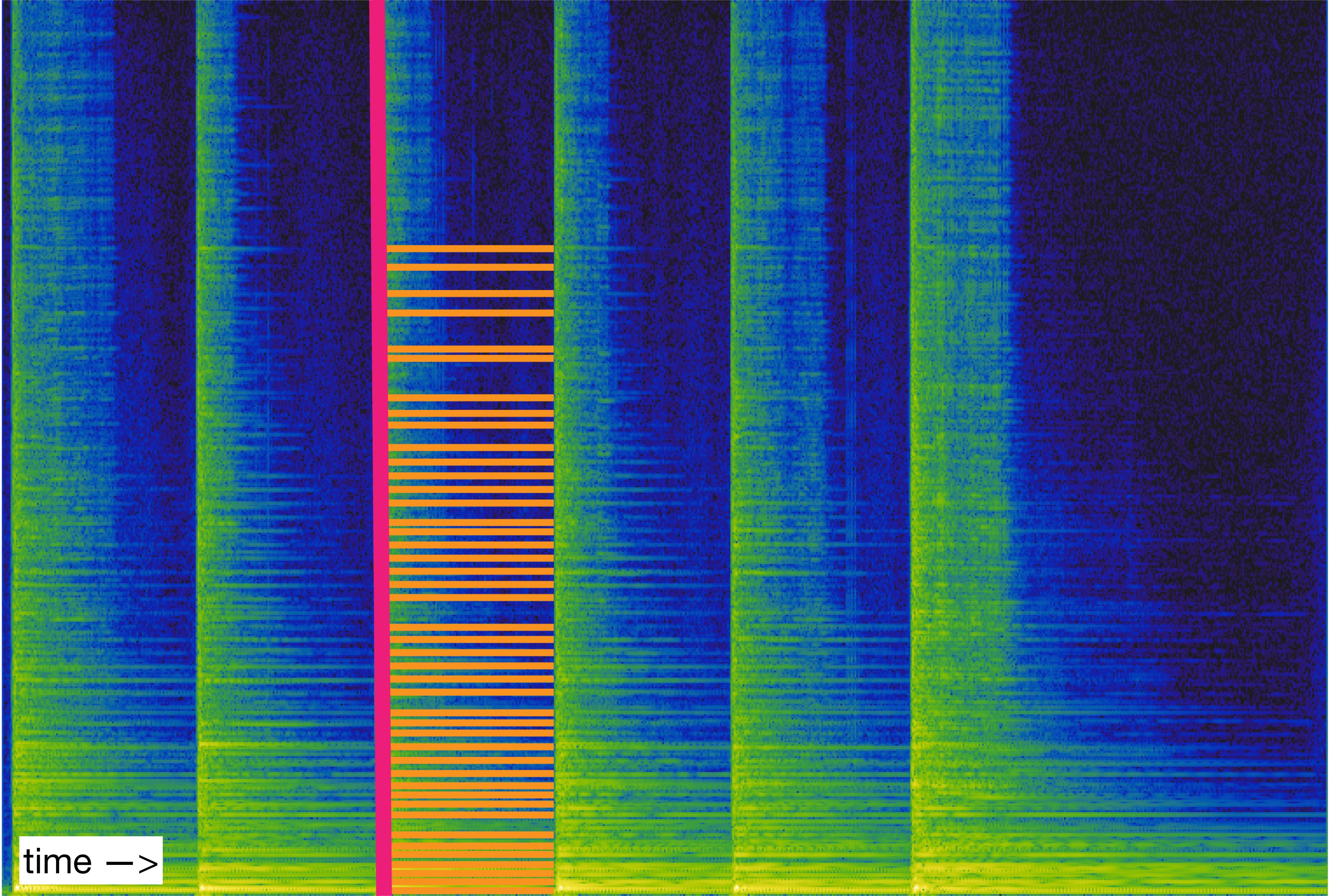
frequency →

time →

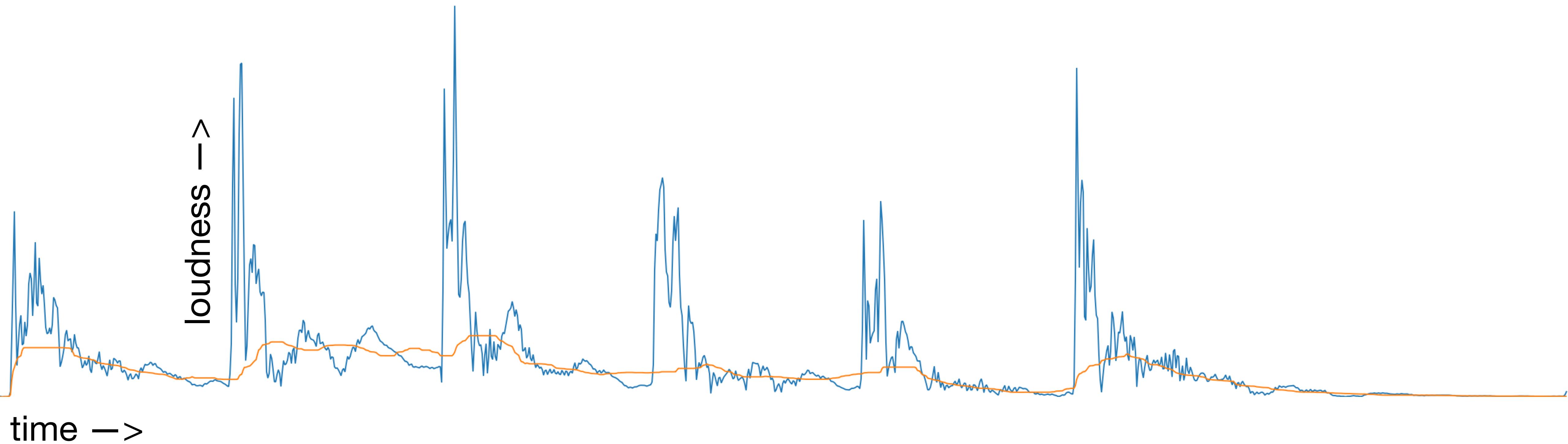


frequency →

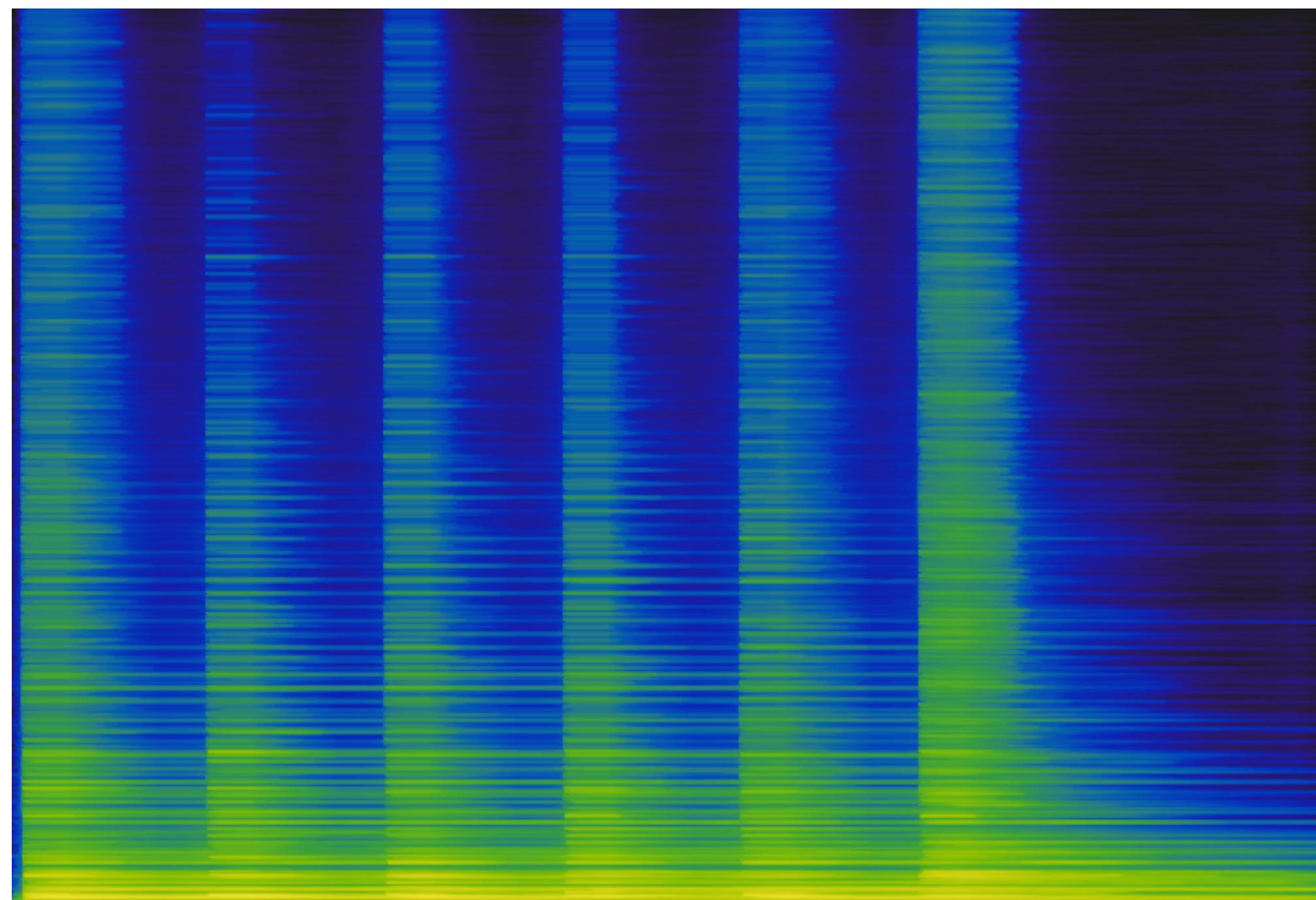
time →



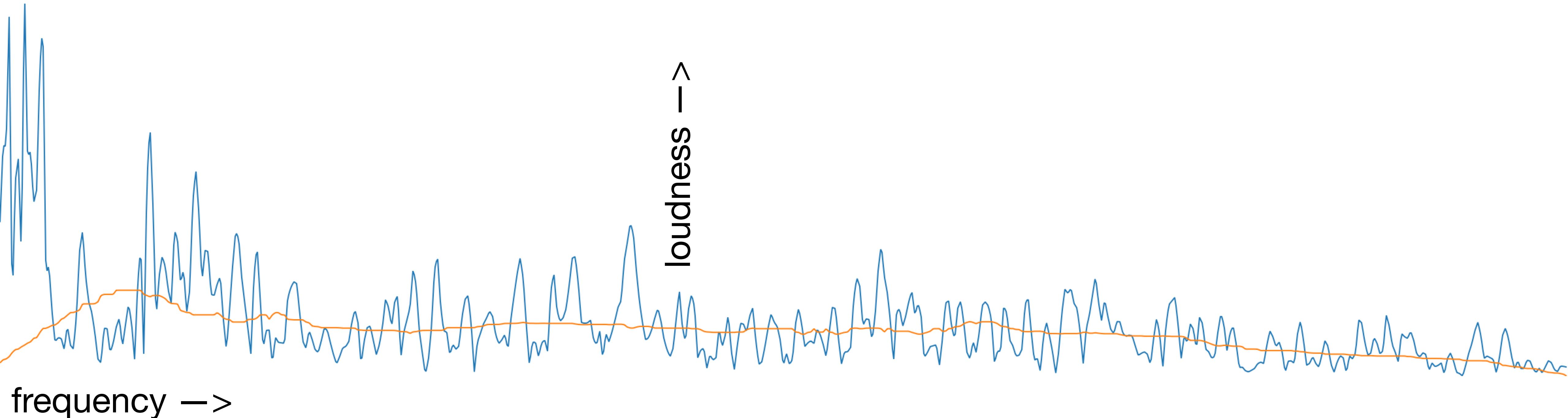
View of a single FFT bin slice (one band of frequencies) through the whole buffer



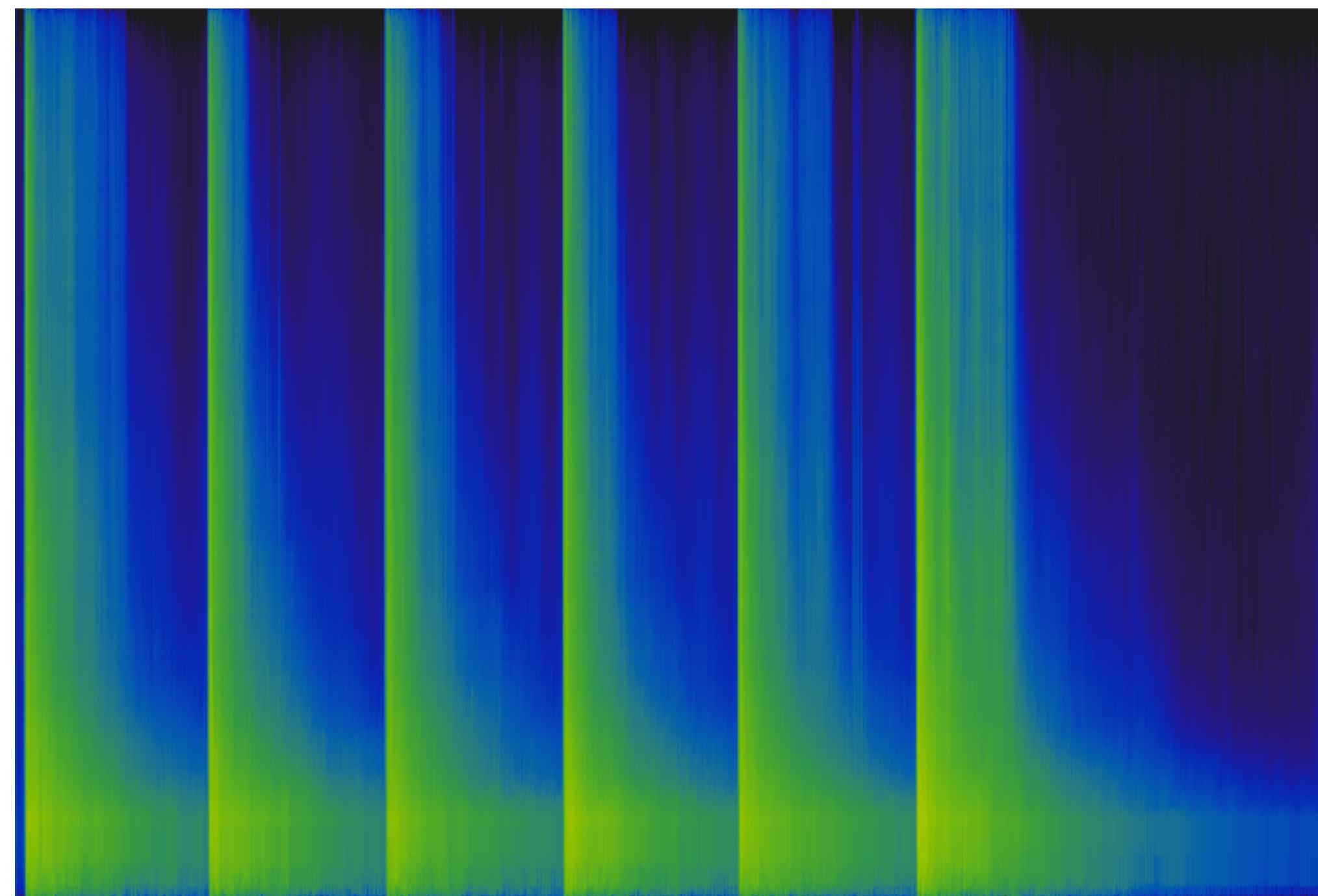
Harmonic Enhanced Spectrum



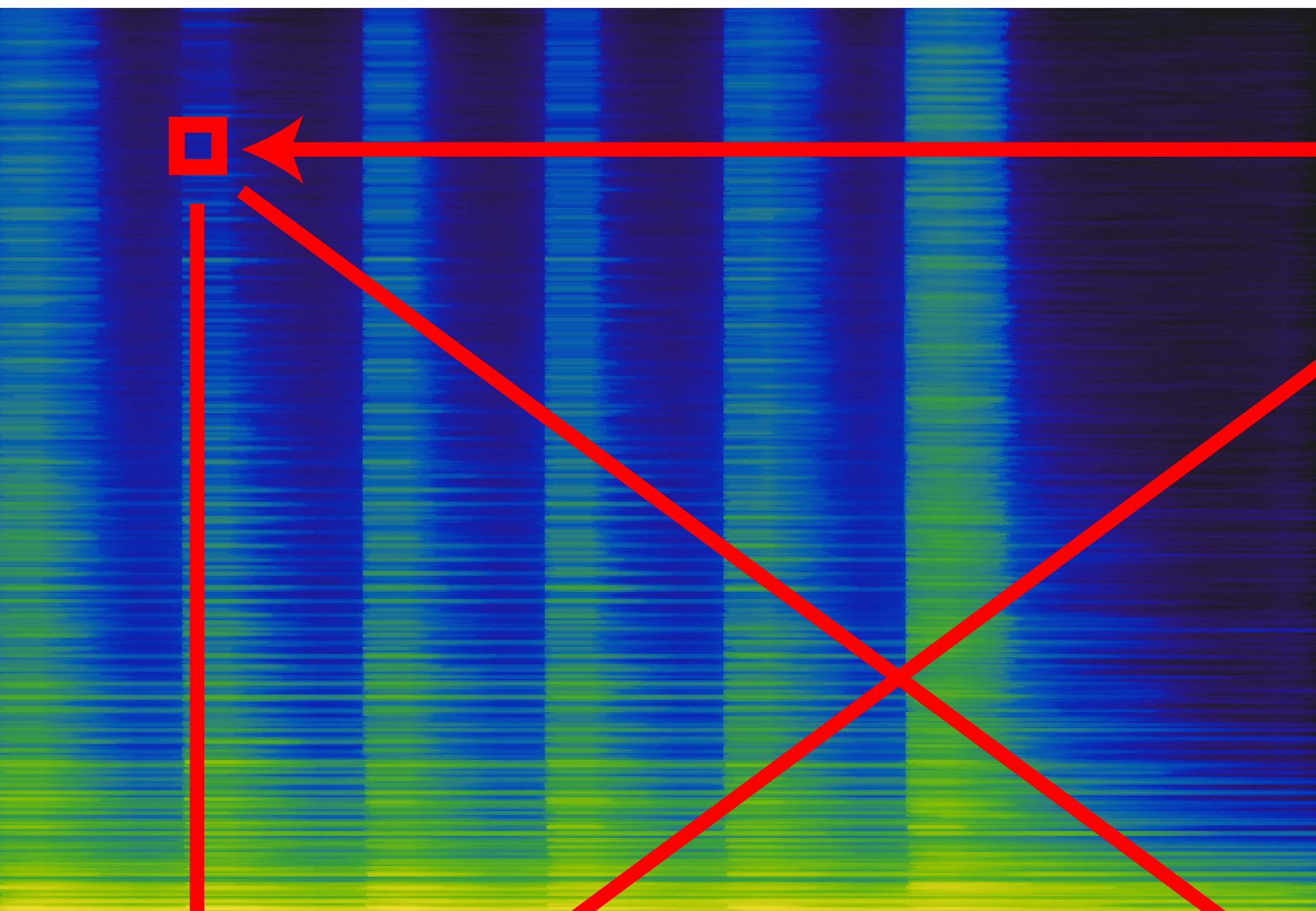
View of a single FFT frame (one moment in time)



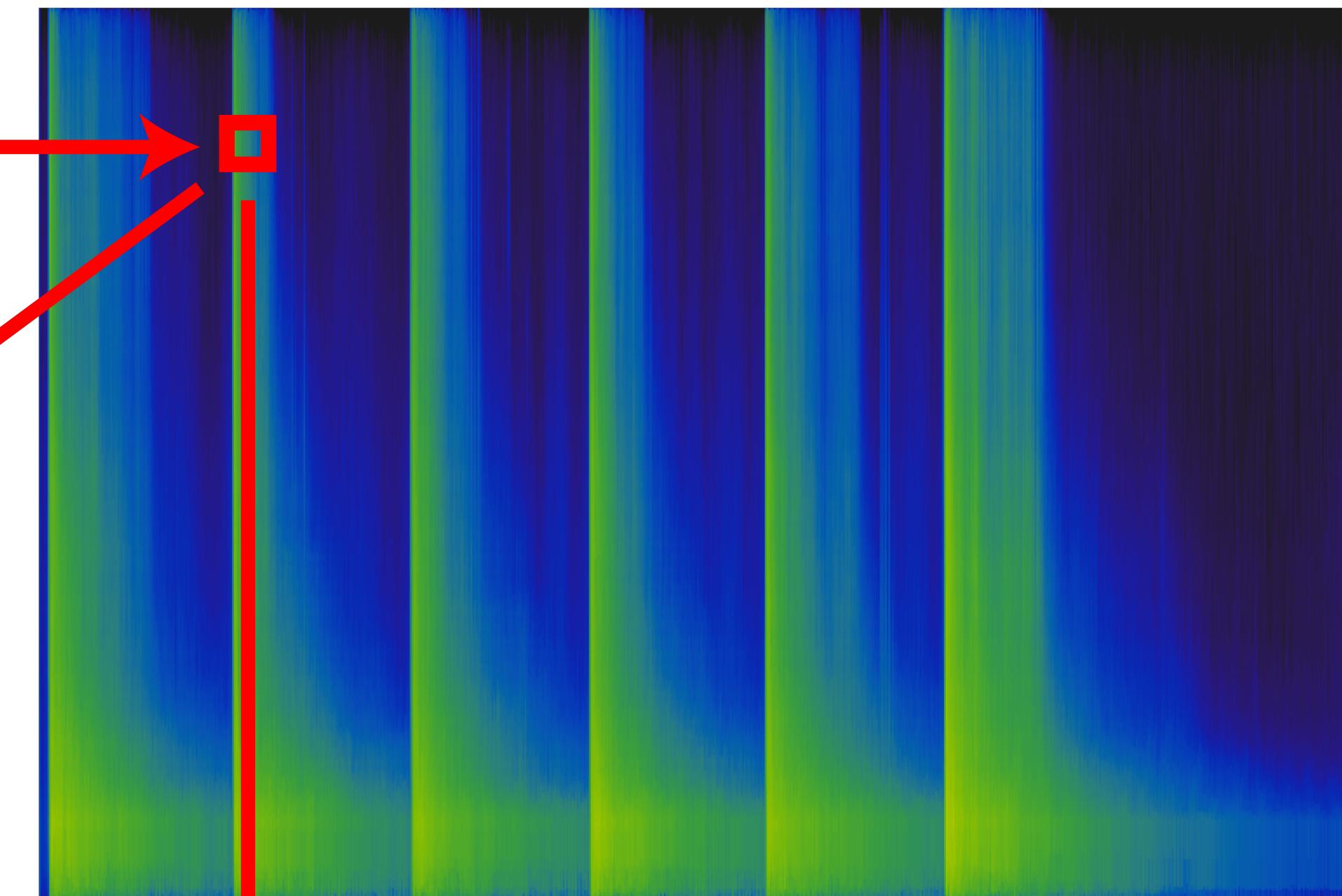
Percussive Enhanced Spectrum



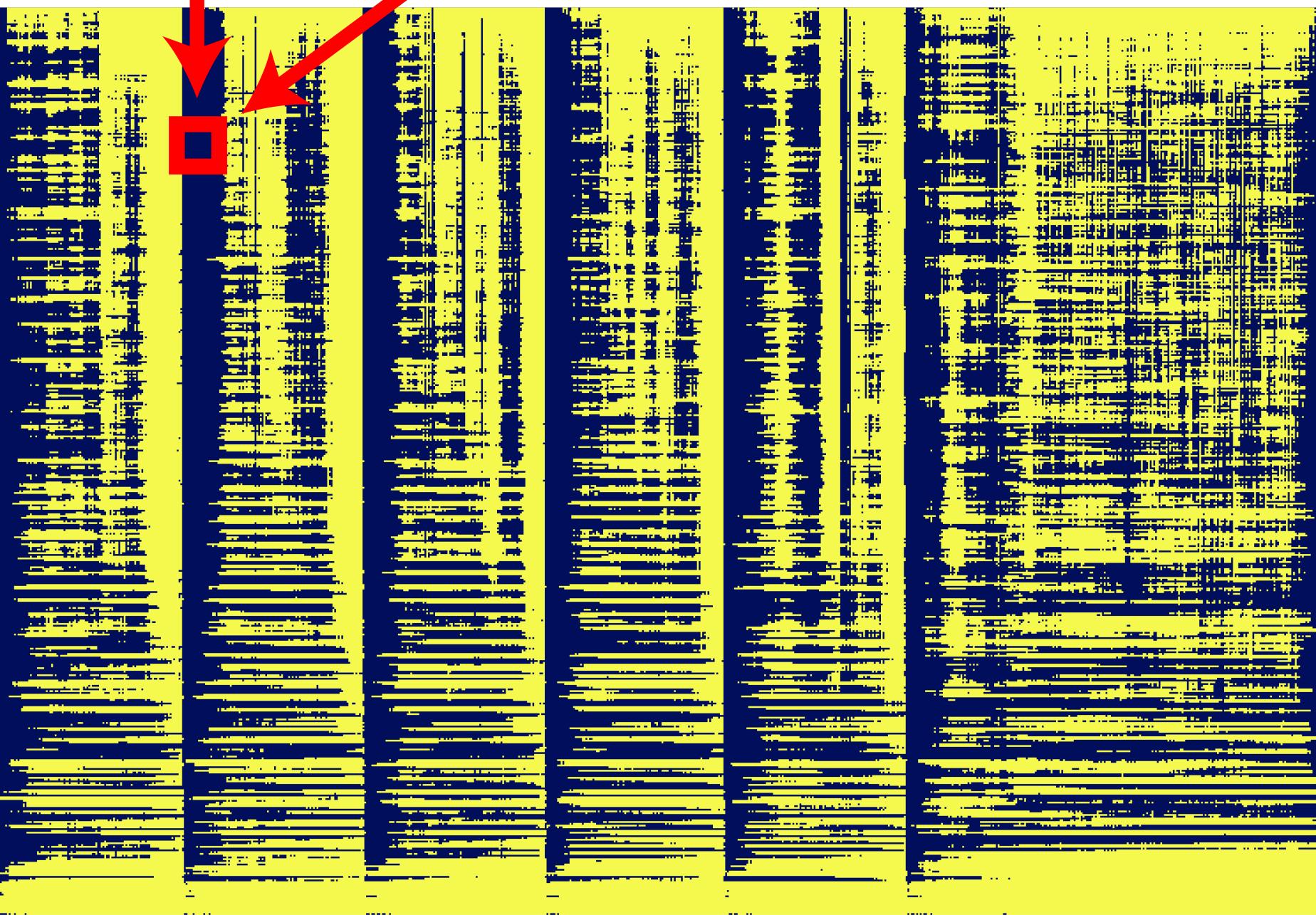
harmonic enhanced spectrogram



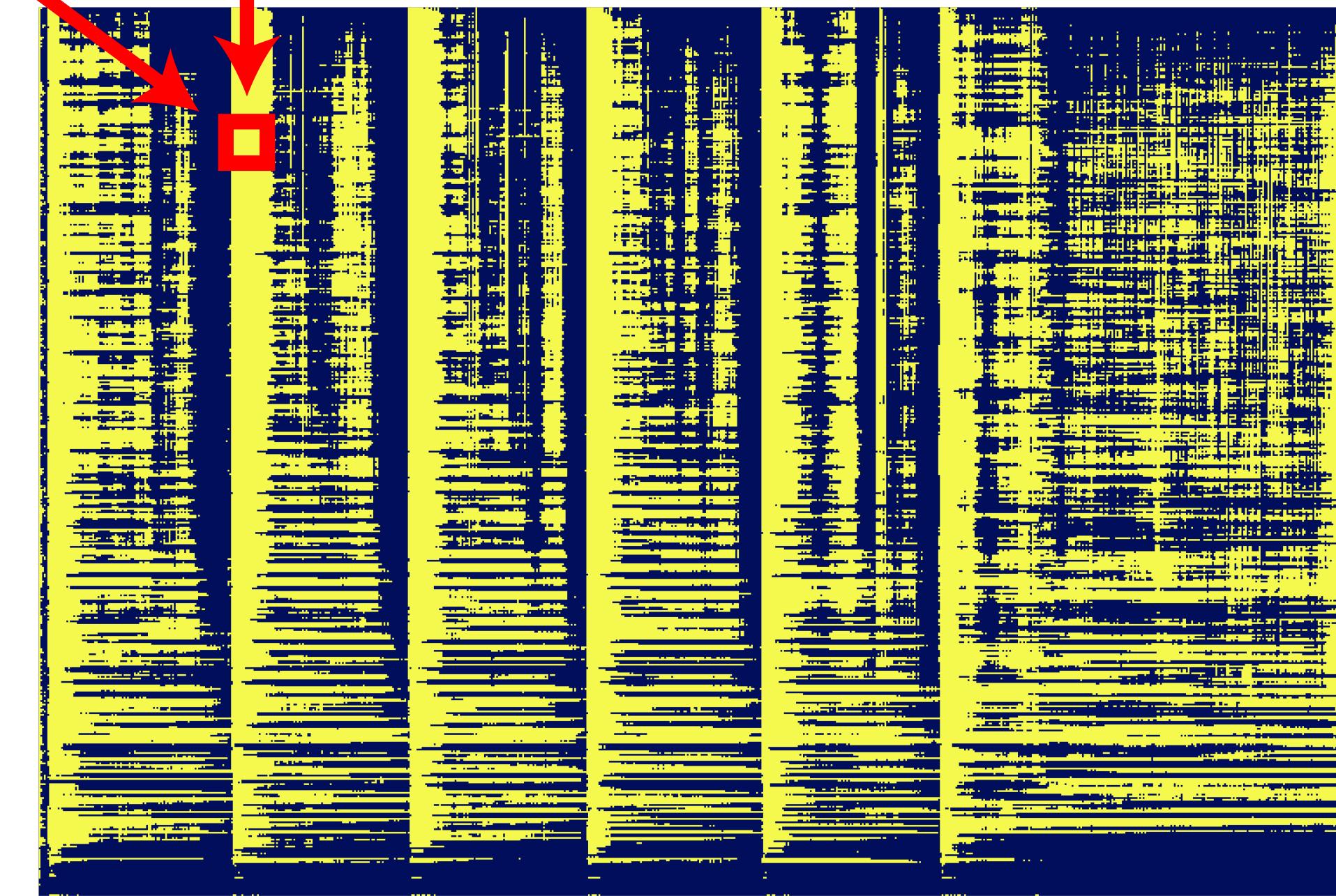
percussive enhanced spectrogram



harmonic binary mask

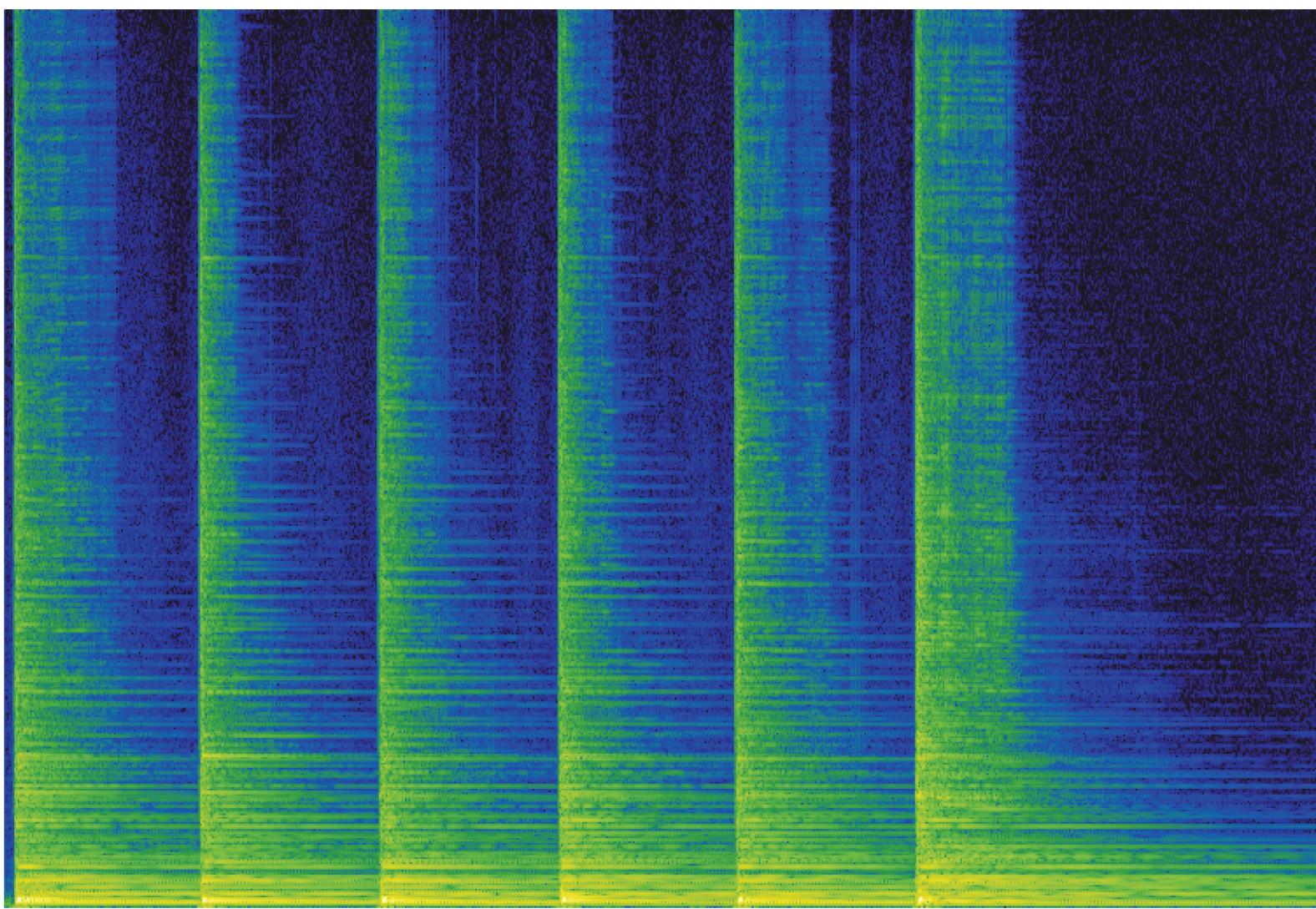


percussive binary mask

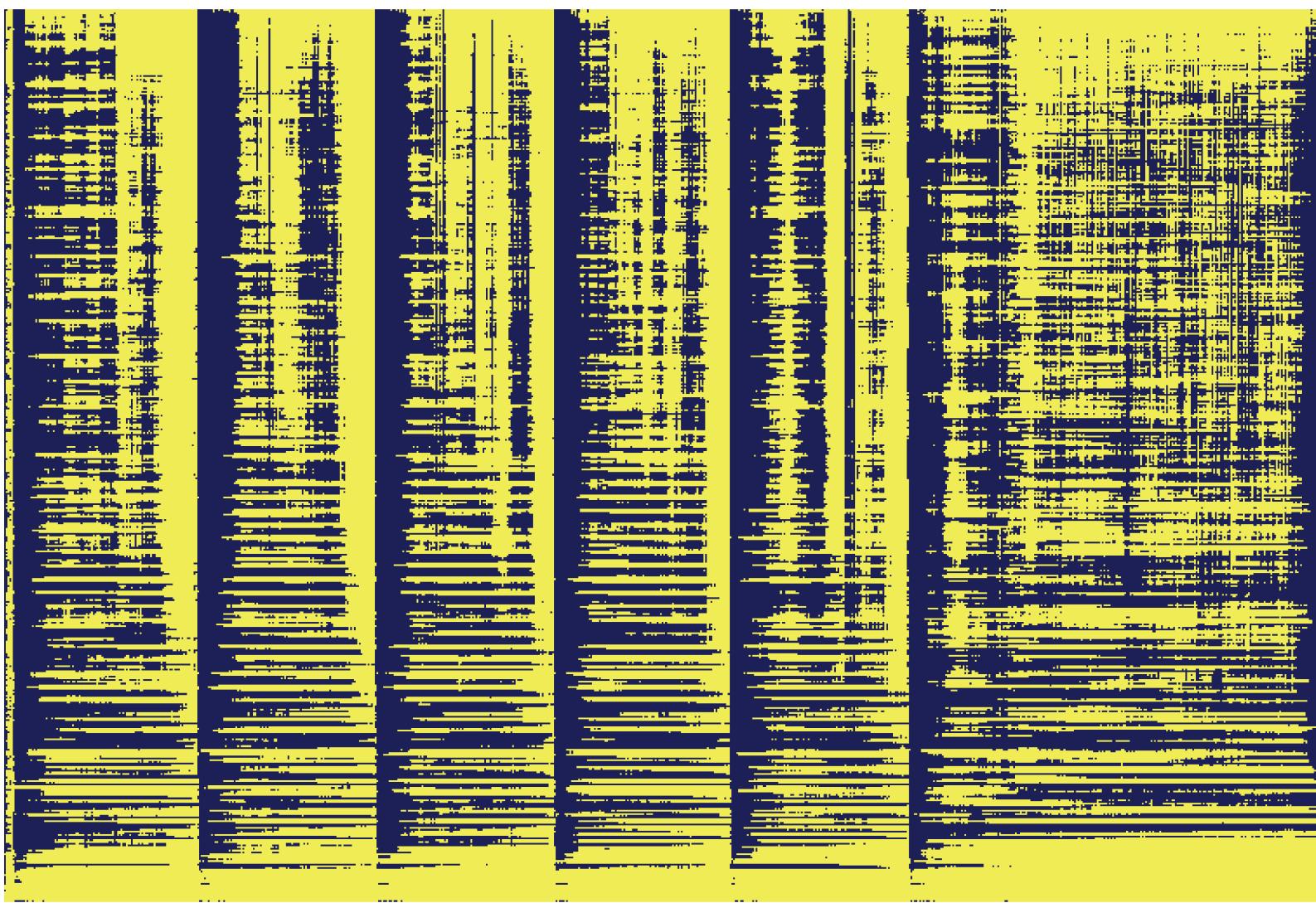


Binary Mask Outputs

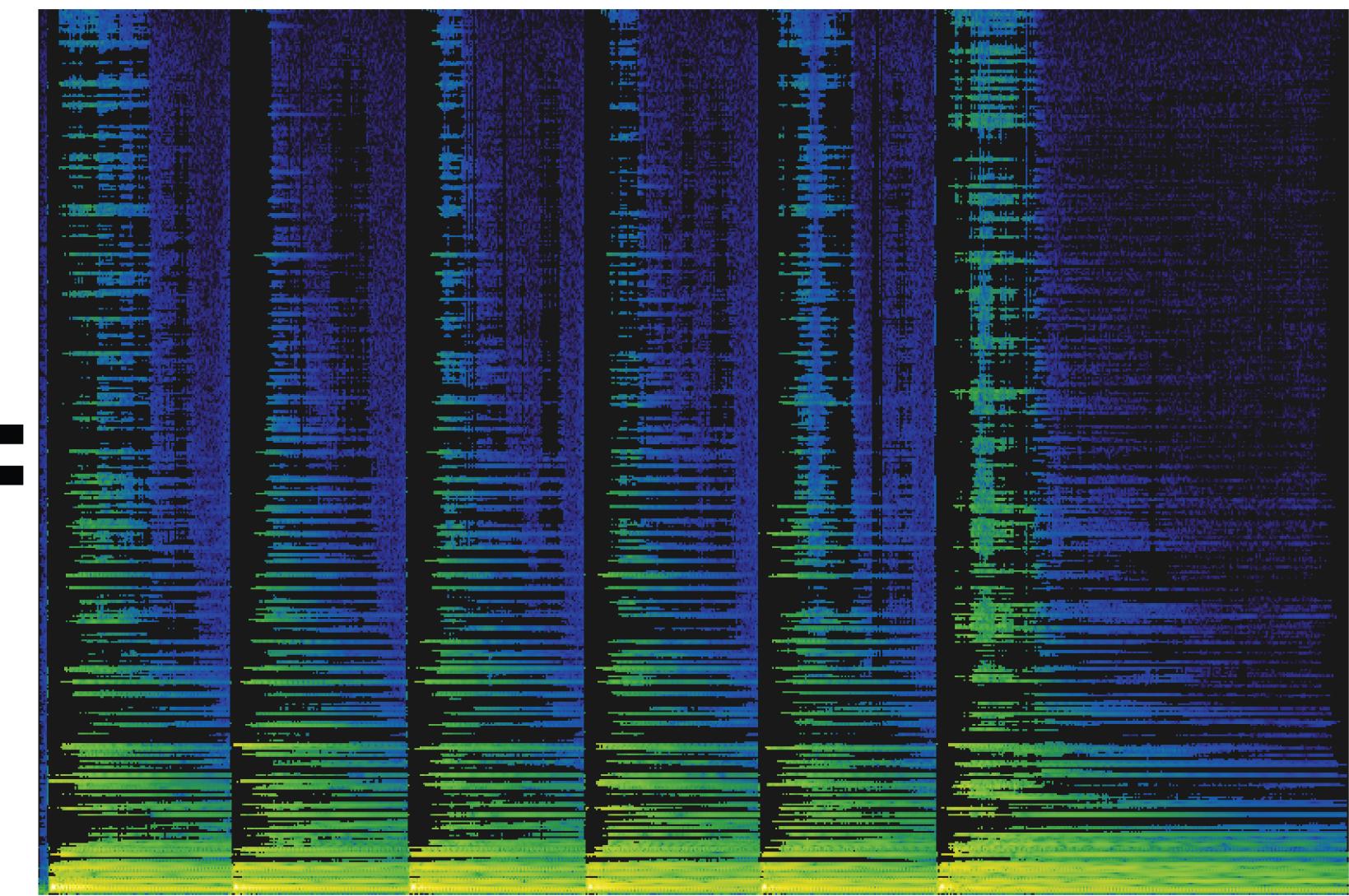
original spectrogram



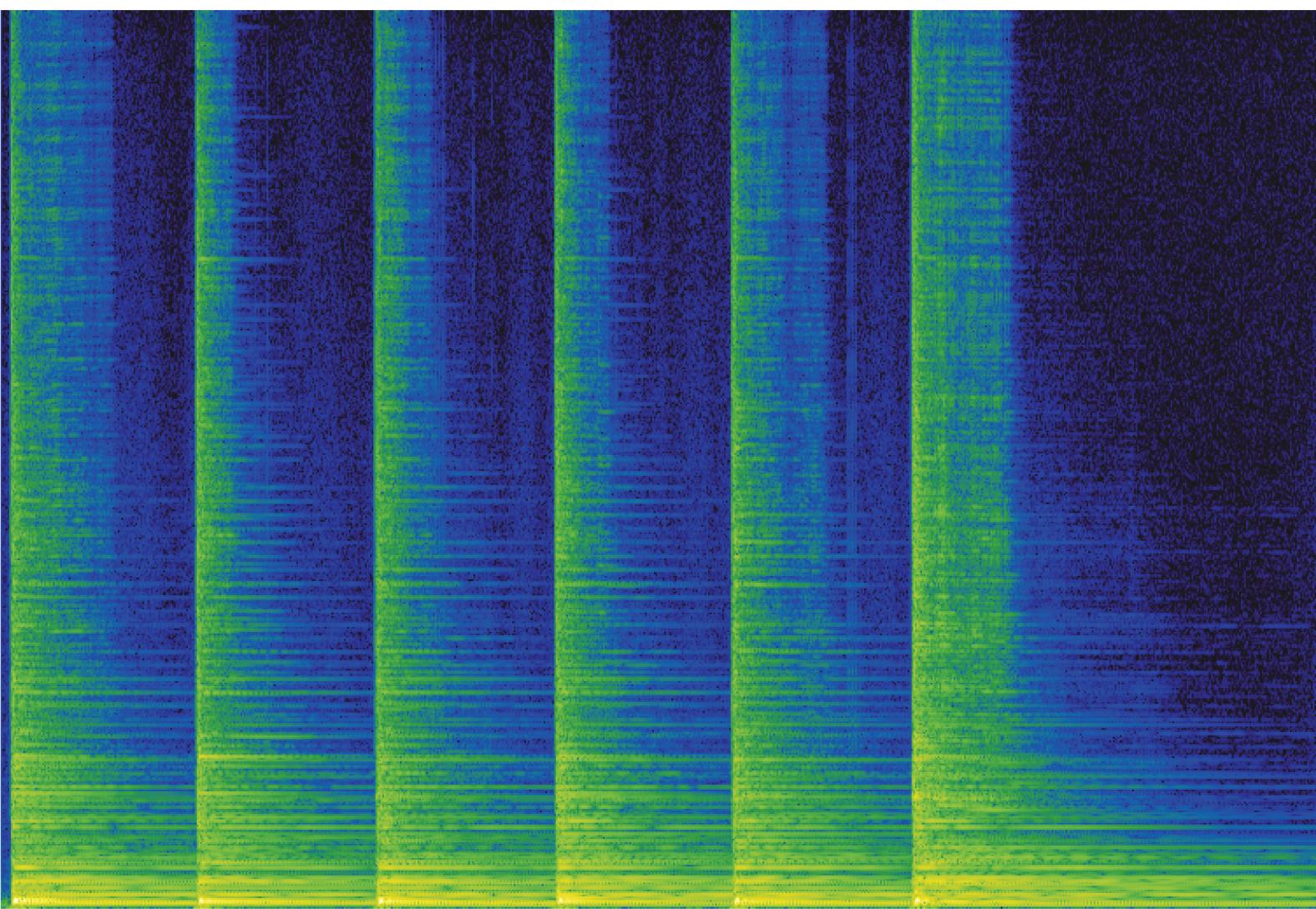
harmonic binary mask



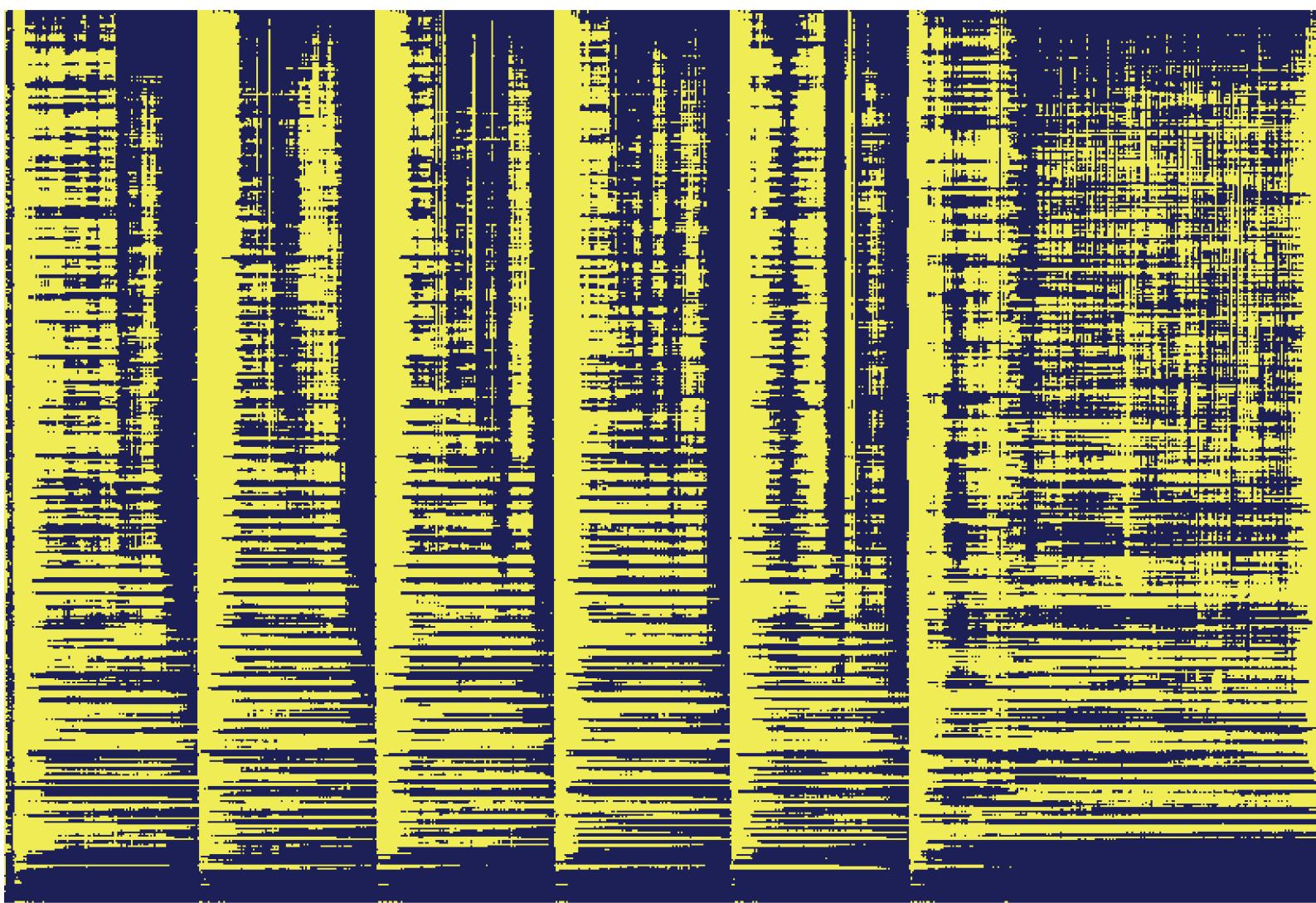
harmonic component output



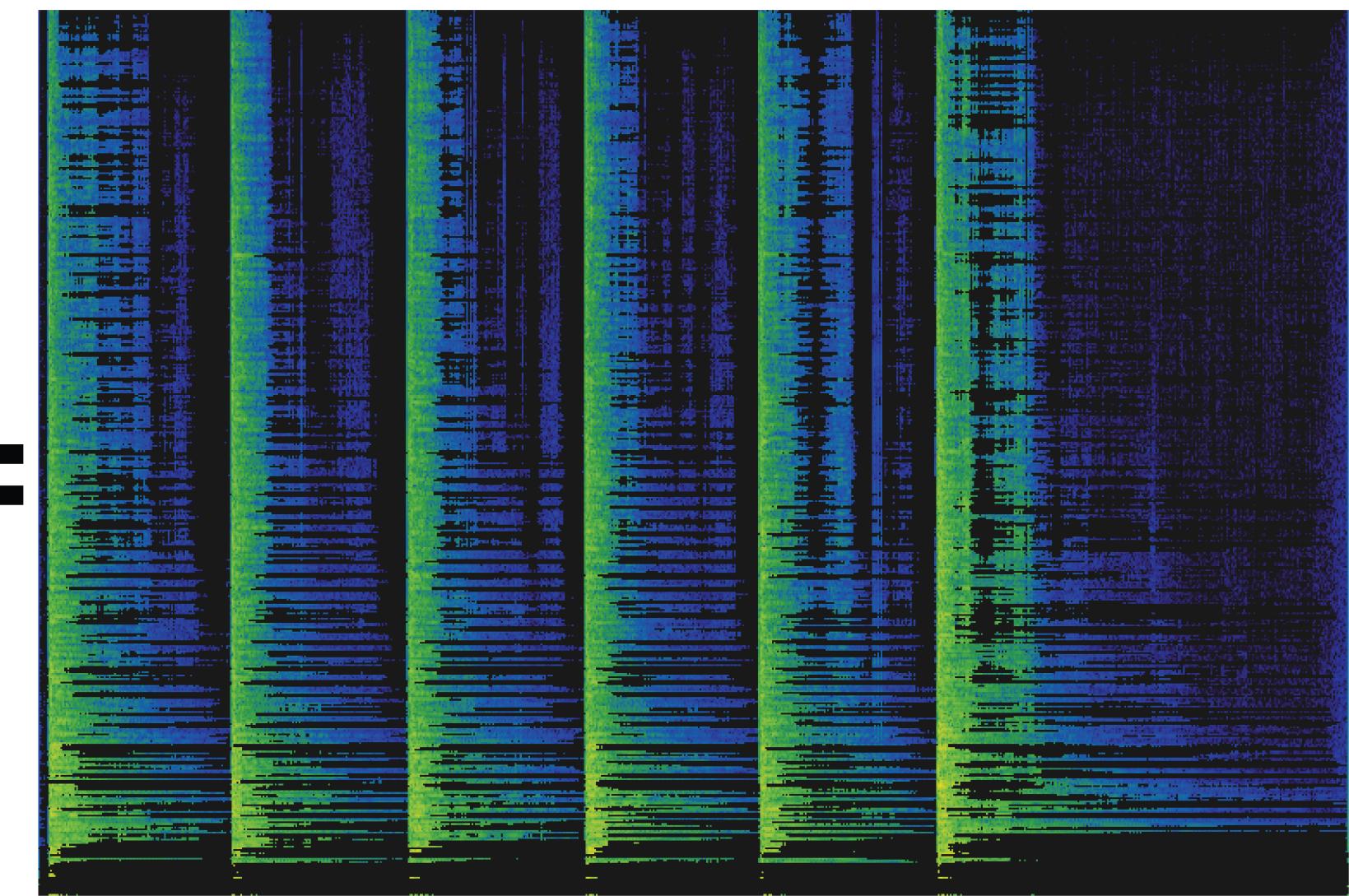
original spectrogram



percussive binary mask

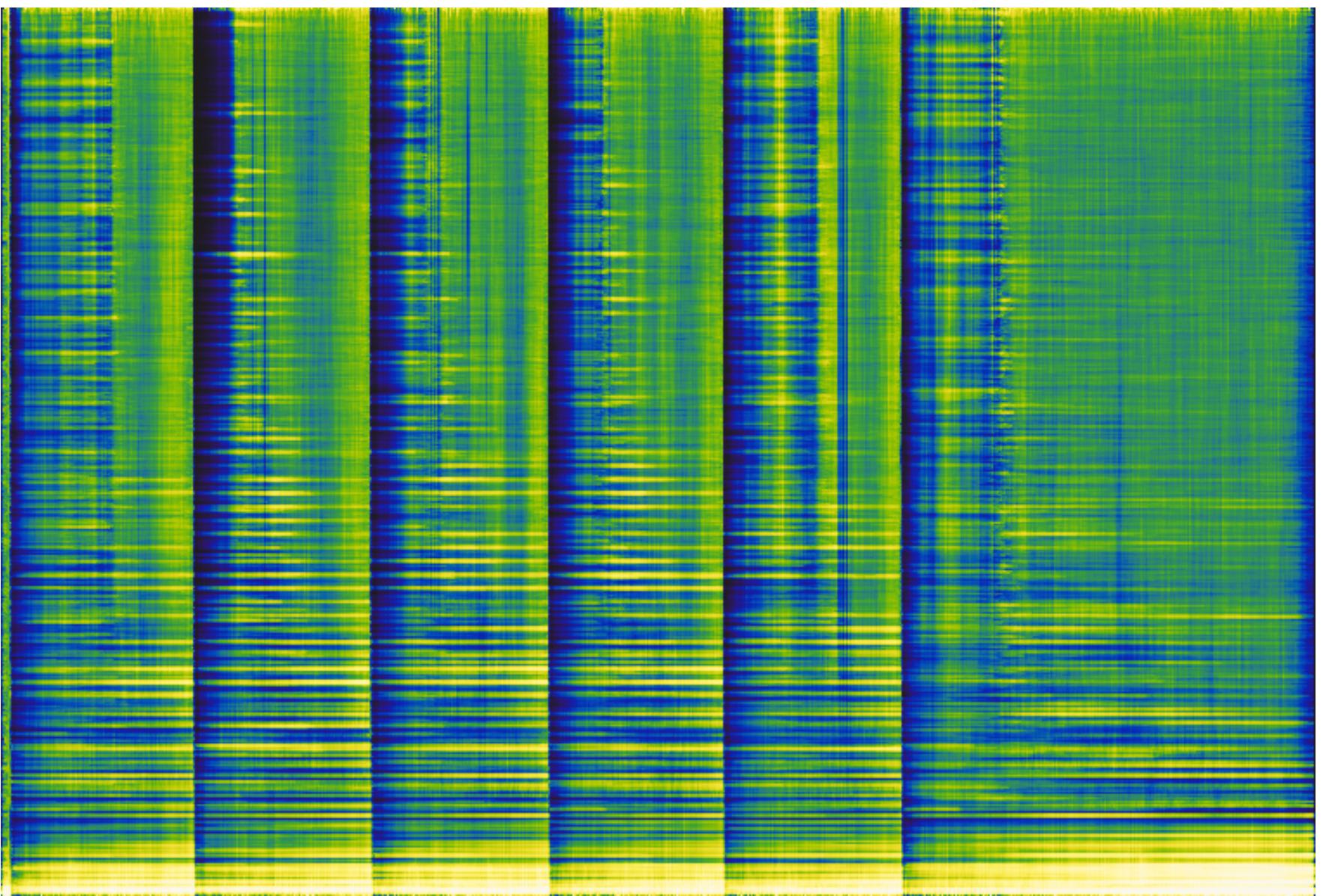


percussive component output

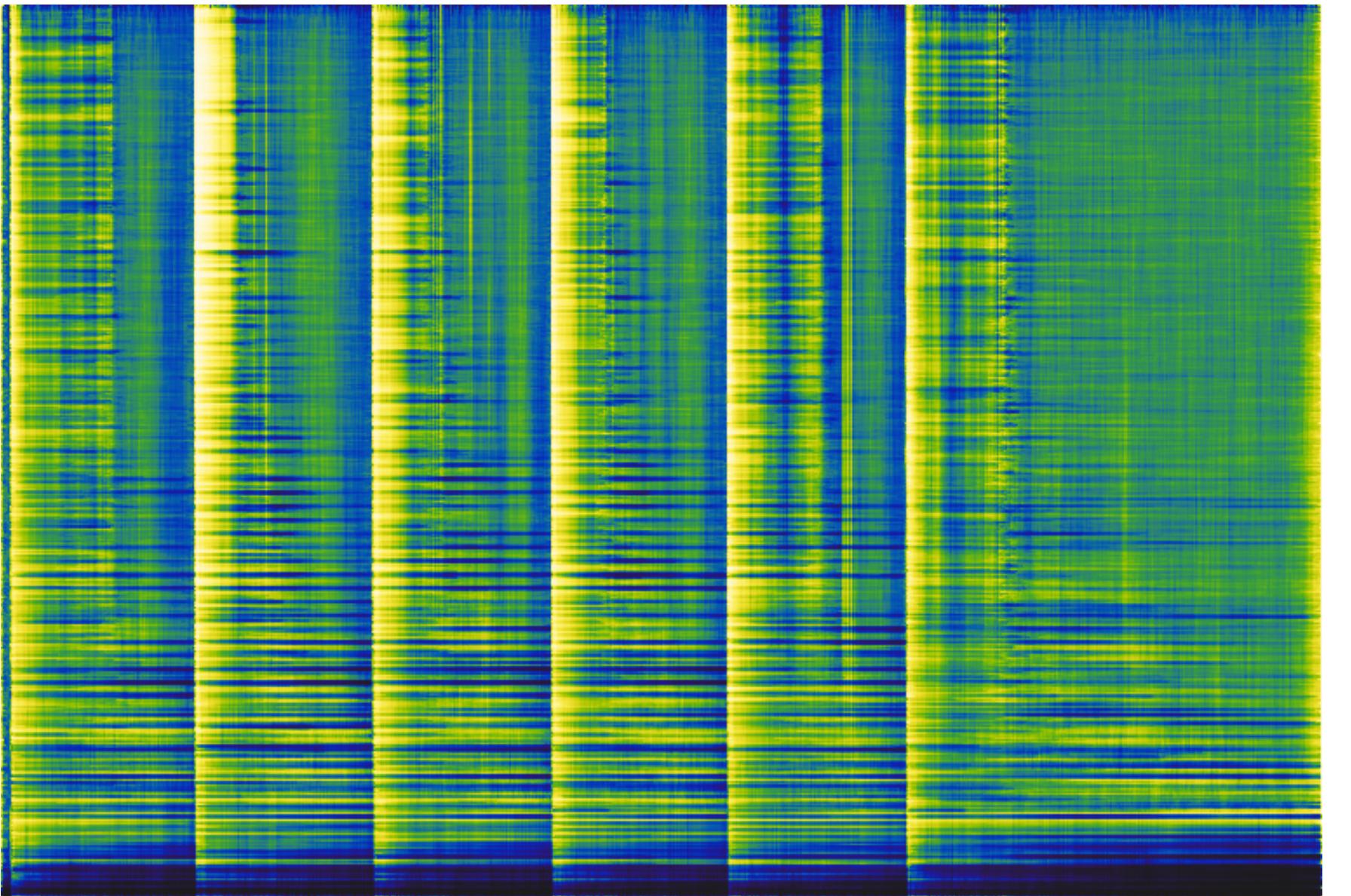


Soft Masks

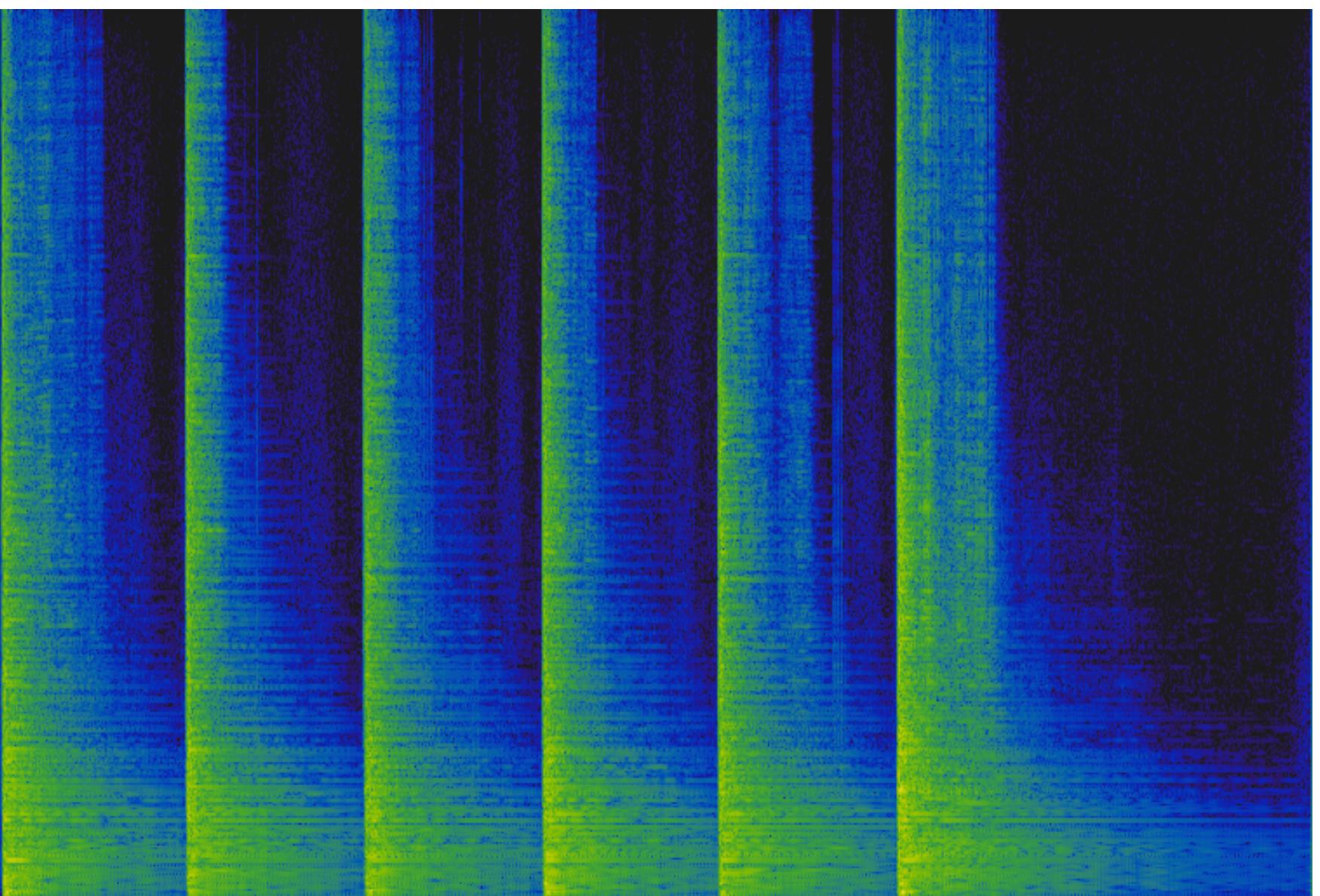
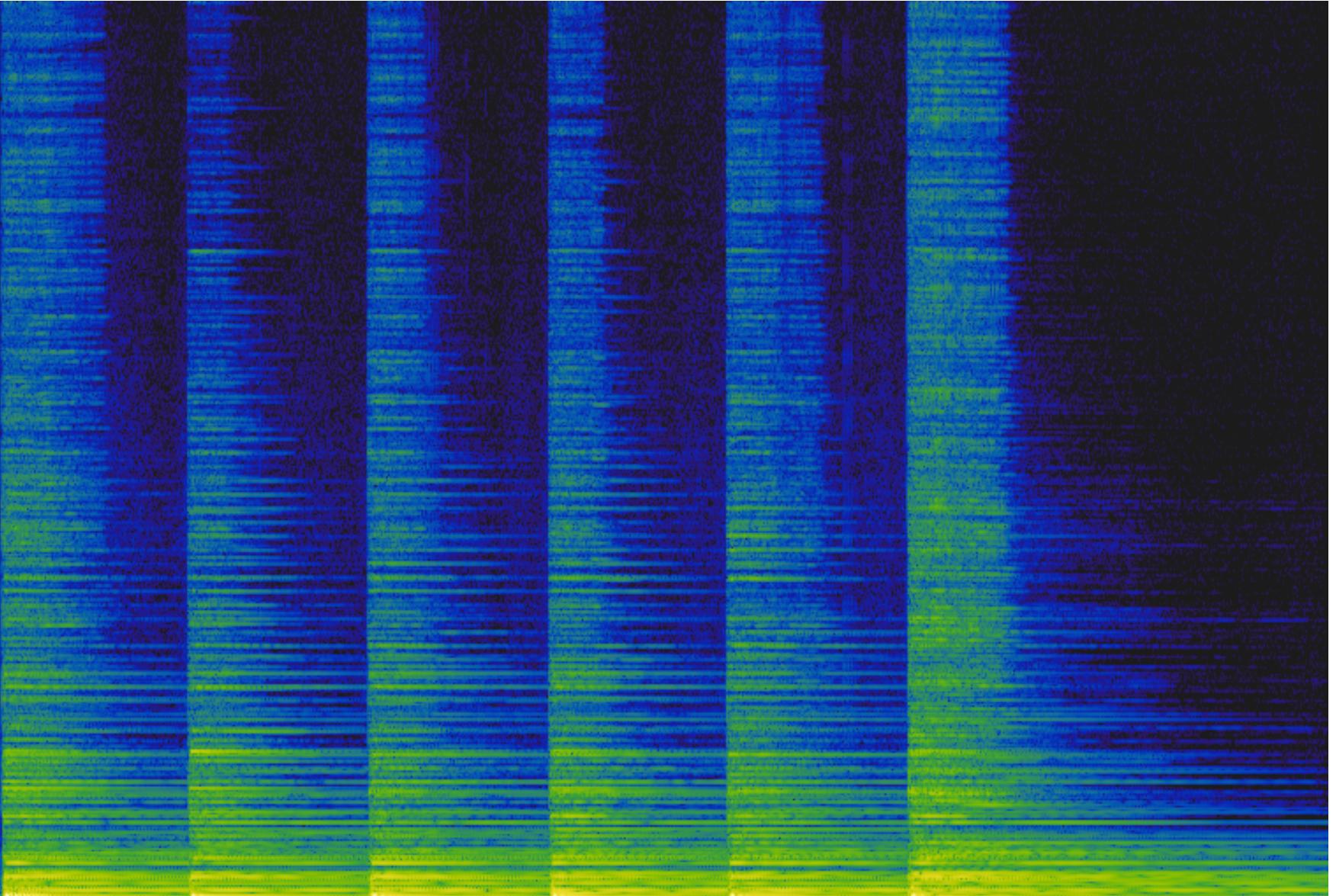
Harmonic



Percussive



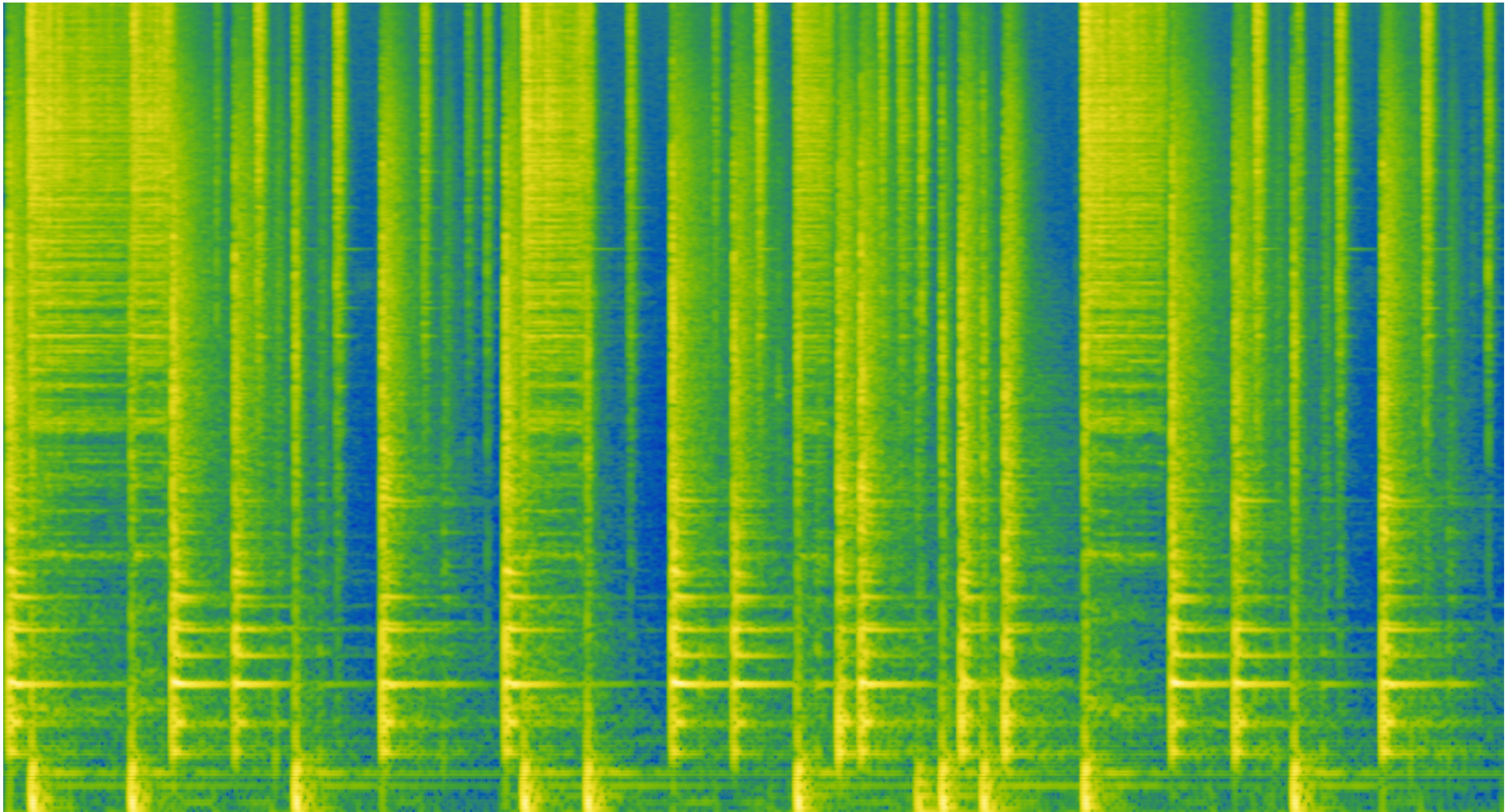
Outputs

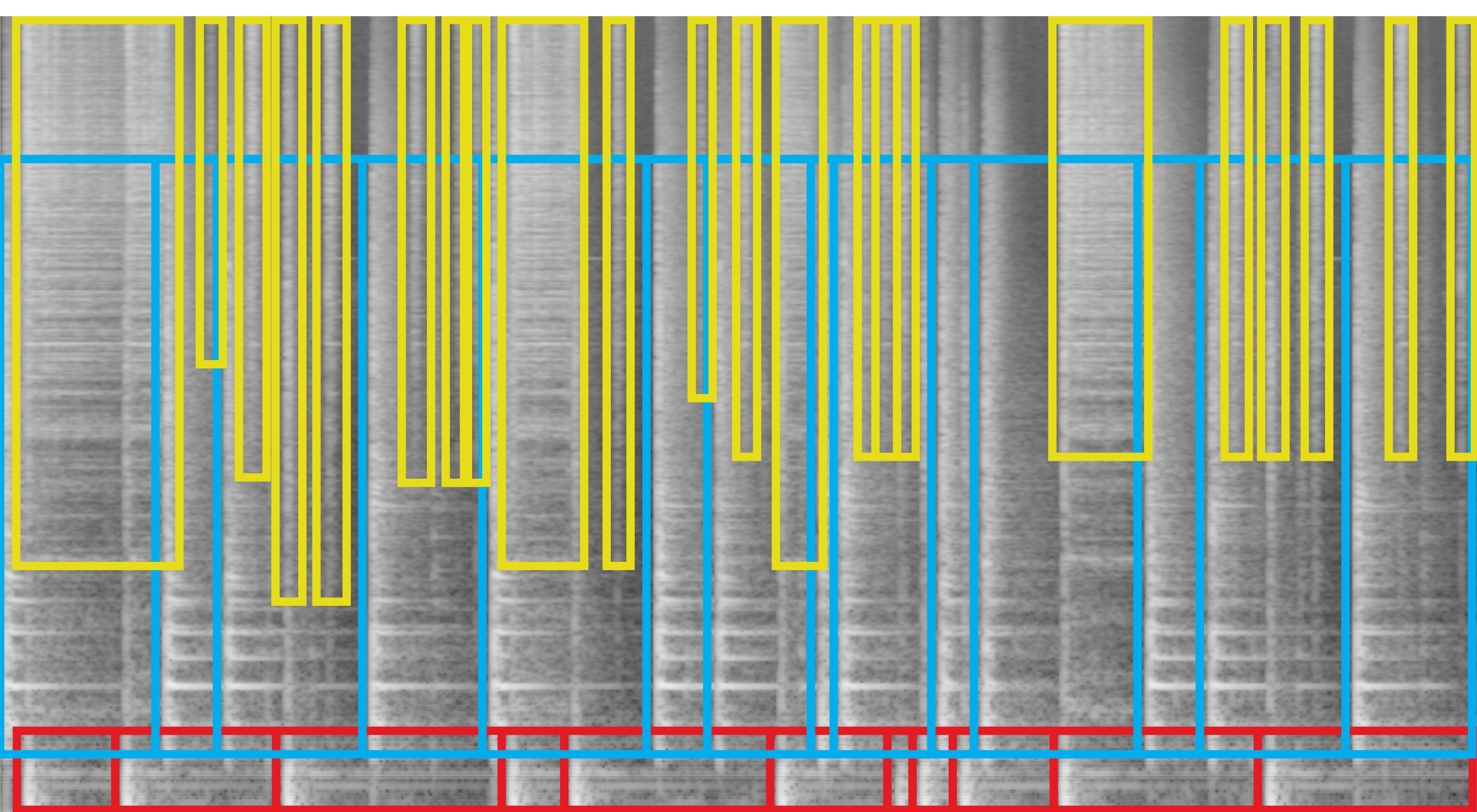


Non-negative Matrix Factorization

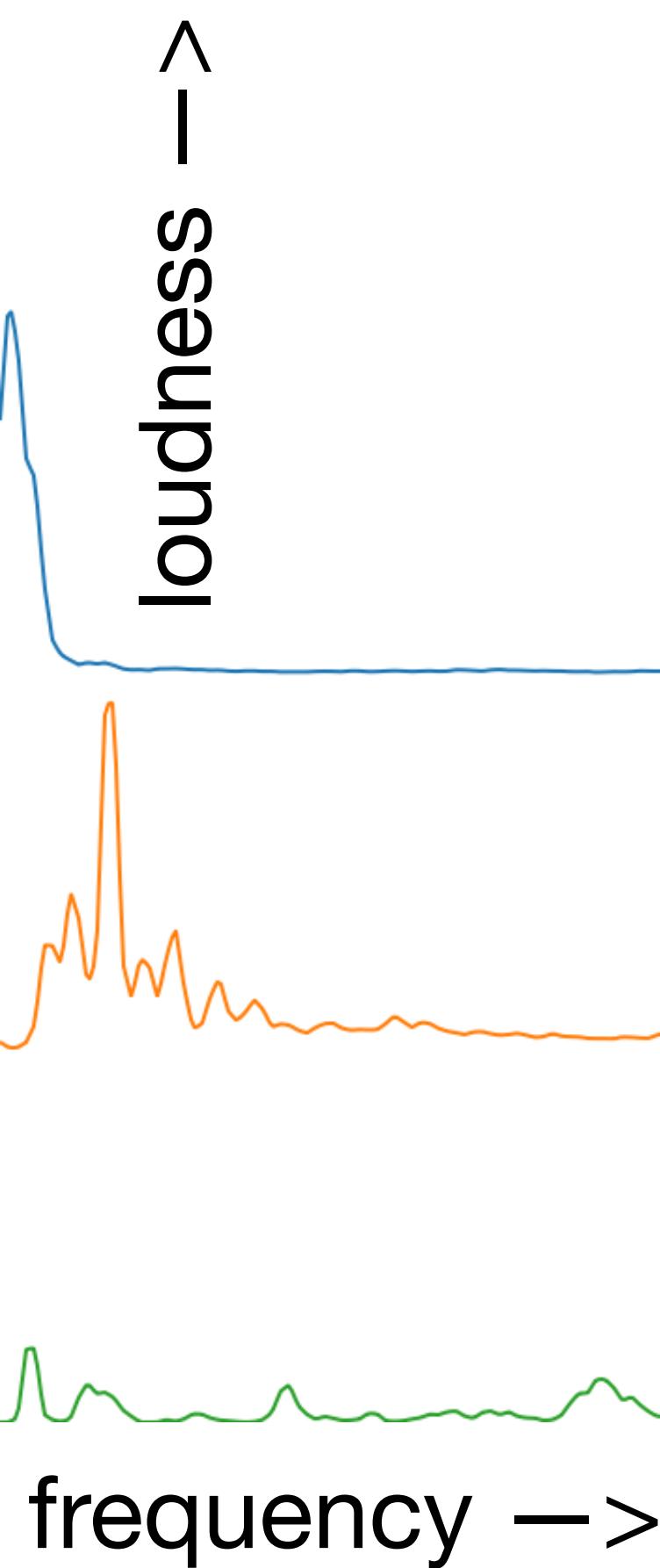
spectral decomposition





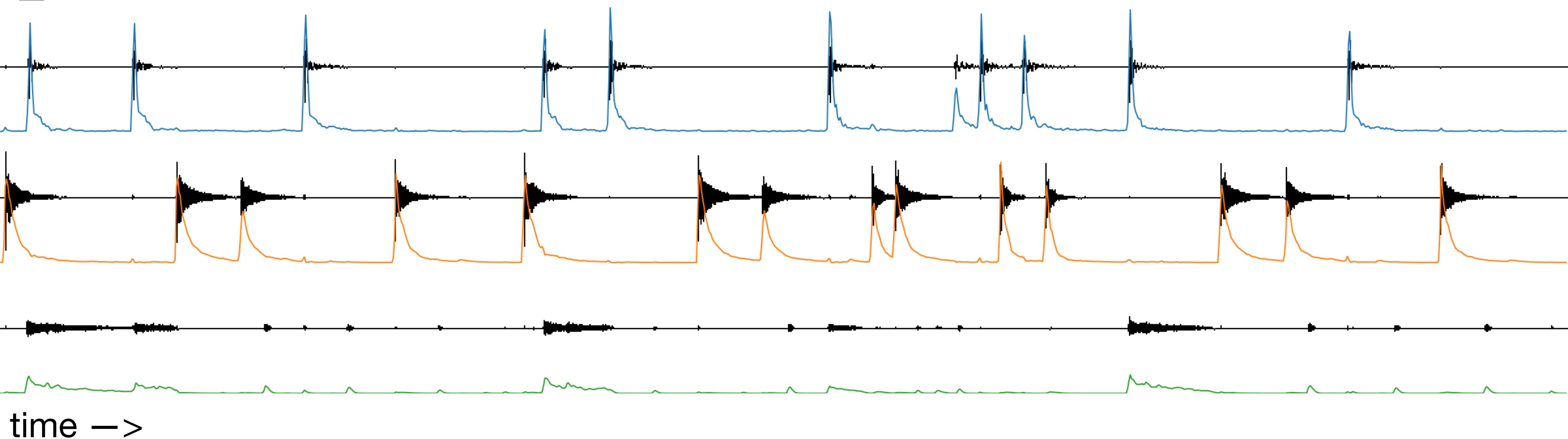


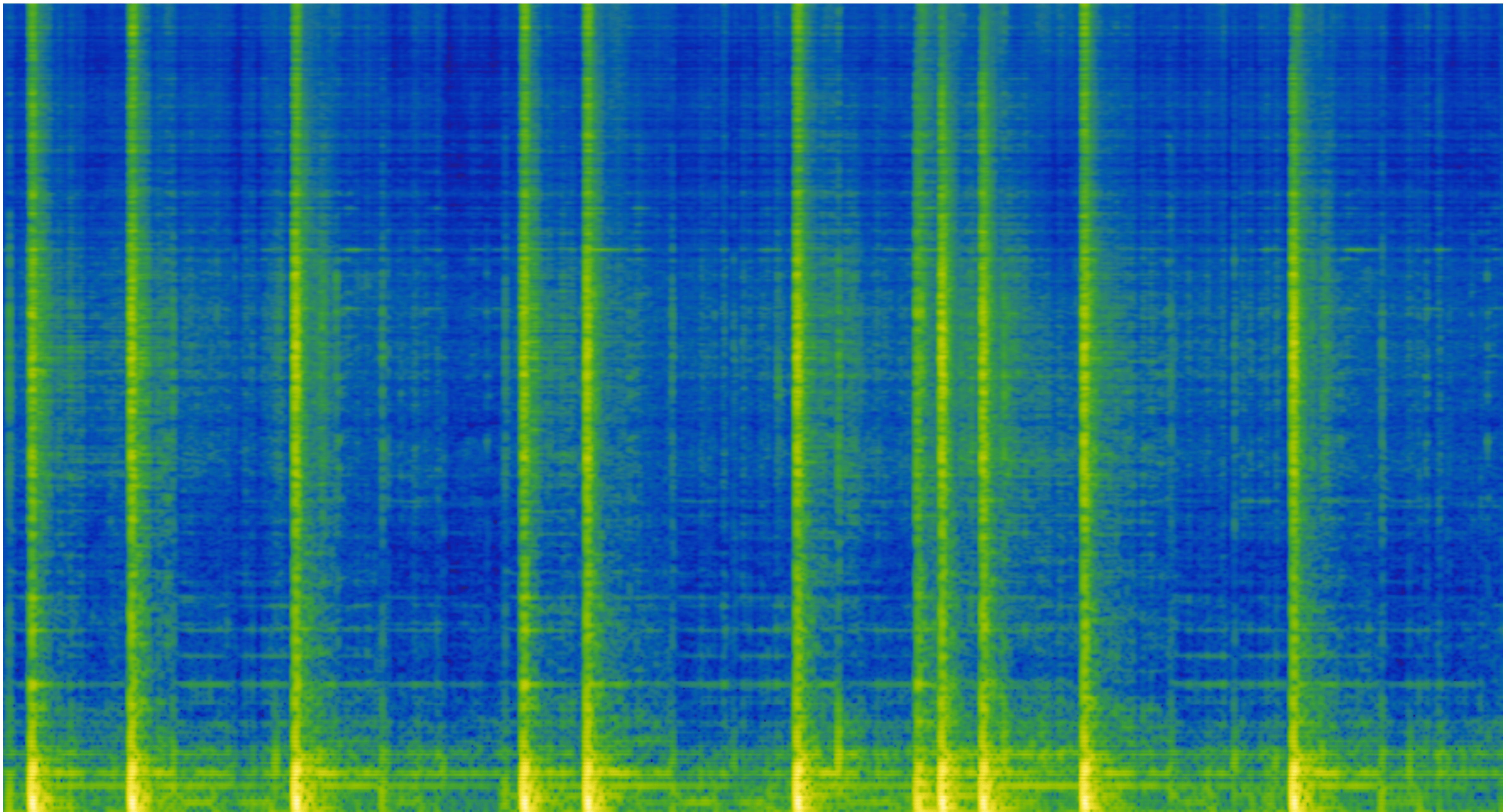
3 bases (spectral templates)

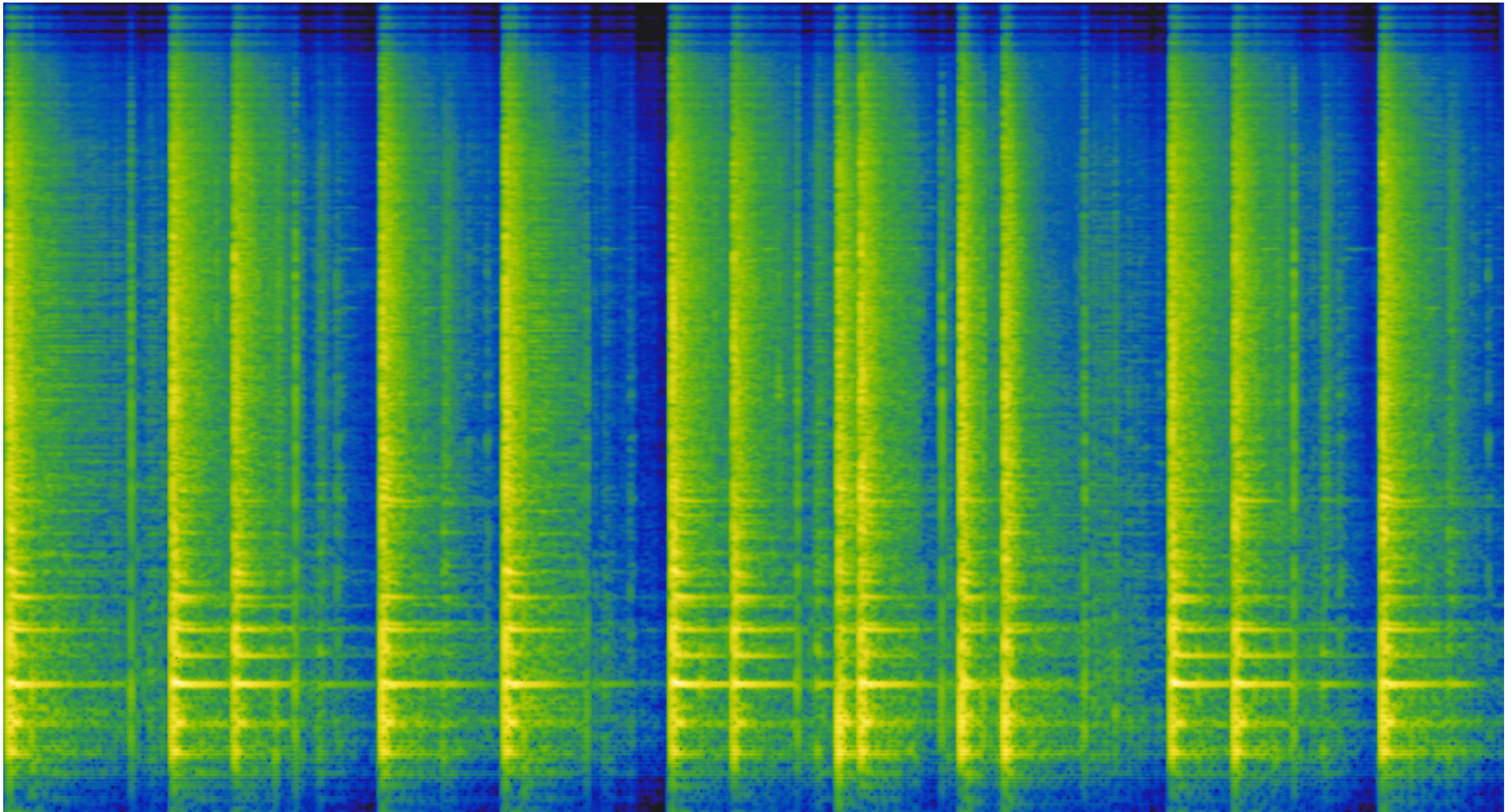


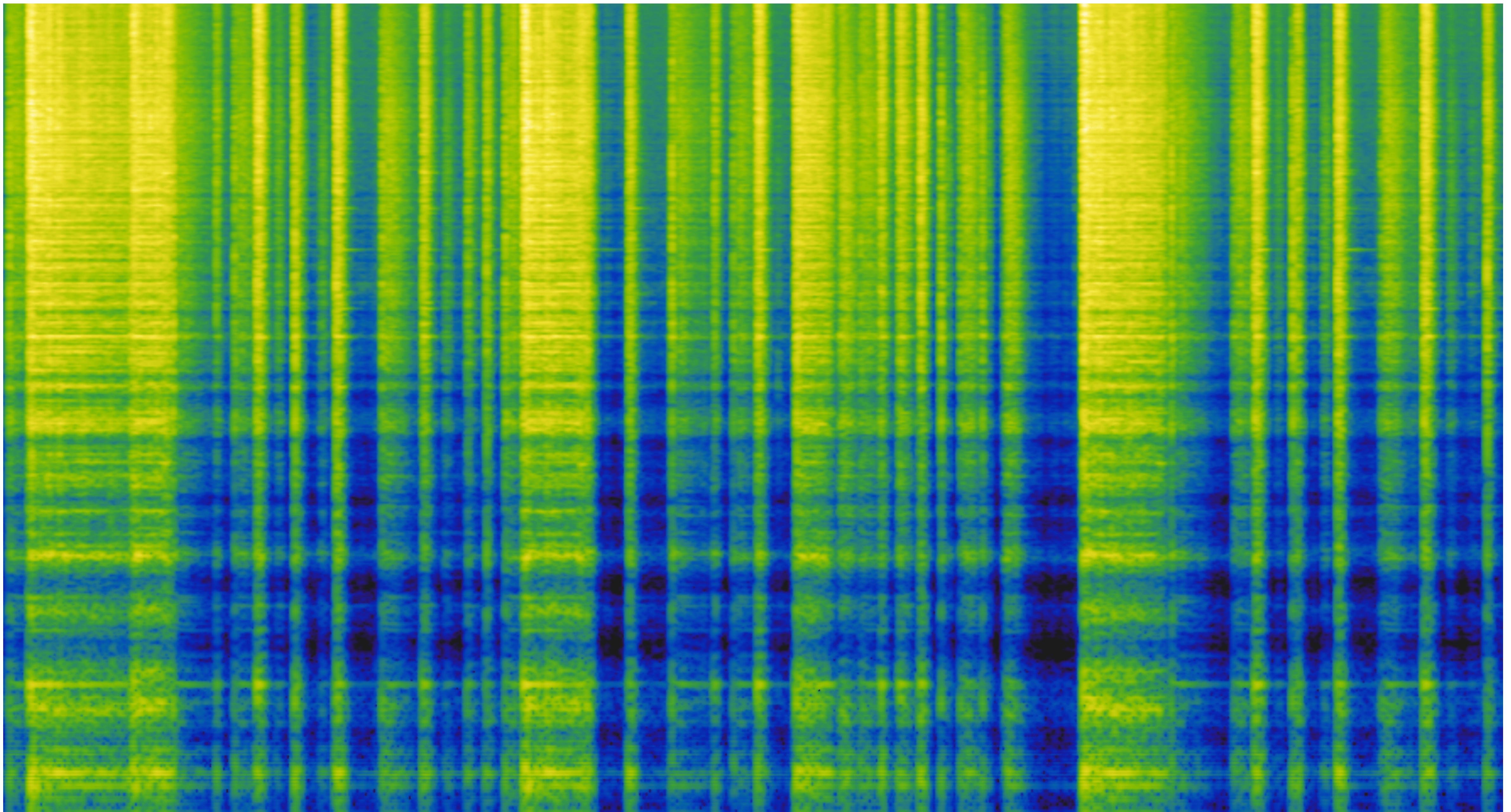
presence ^

3 activations (time series indicating the presence of each basis)





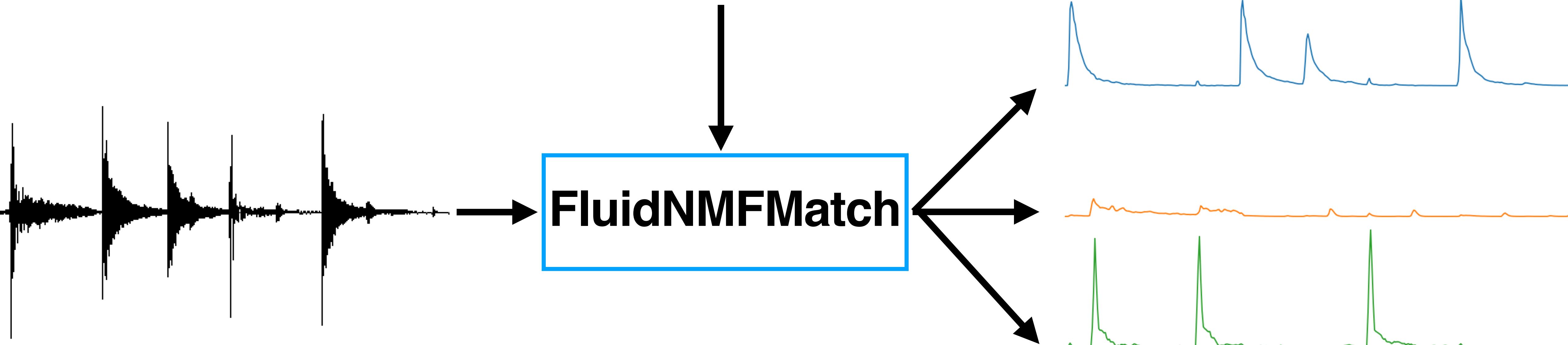




FluidNMFMatch

compare real-time audio to pre-specified bases

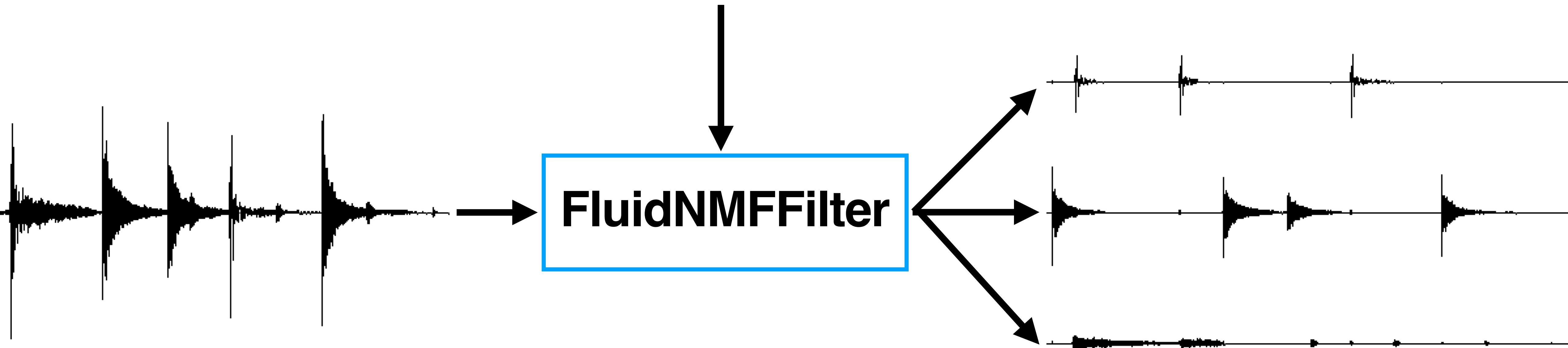
bases from a
FluidBufNMF analysis



FluidNMFFilter

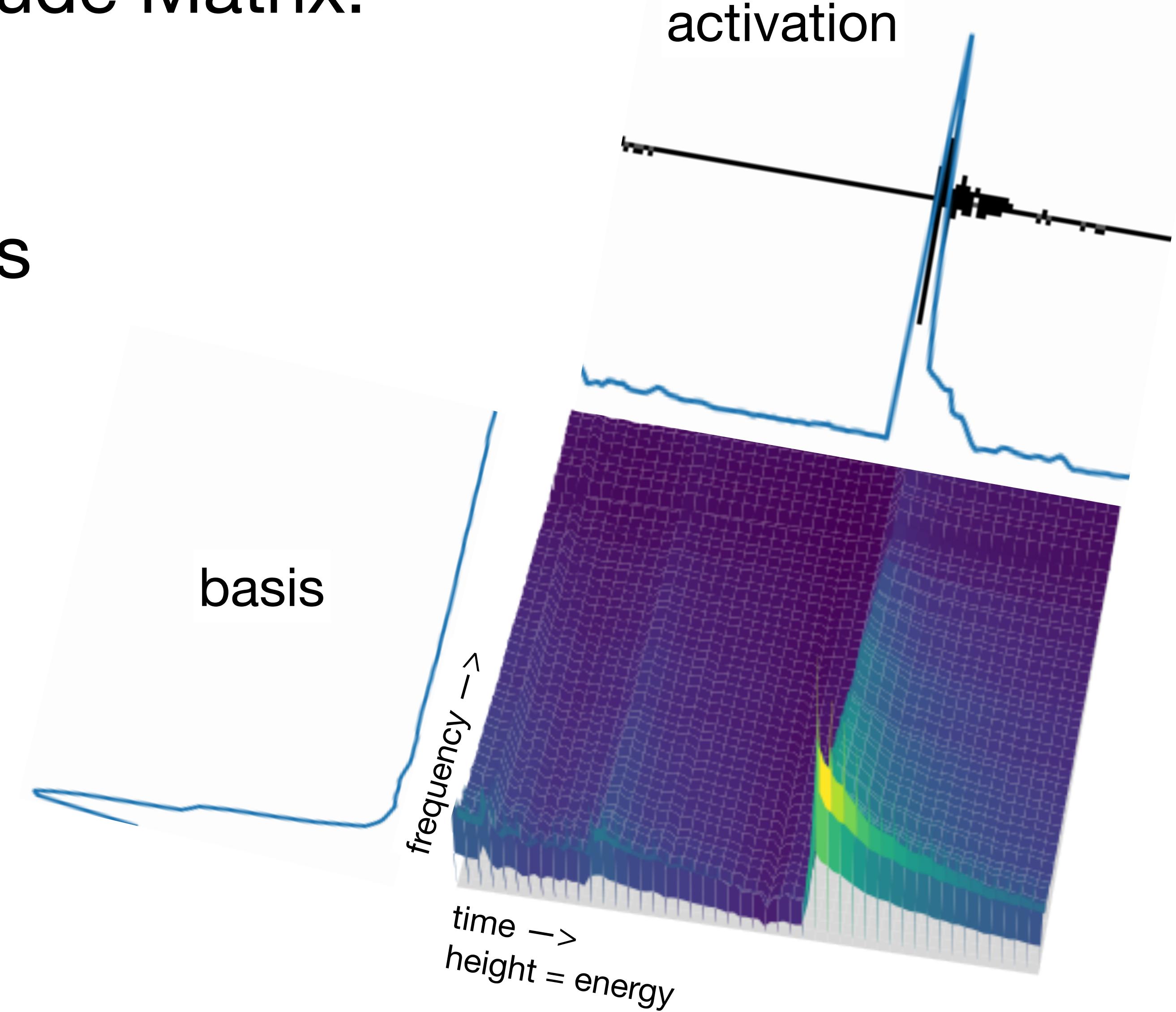
decompose a real-time audio signal using pre-specified bases

bases from a
FluidBufNMF analysis

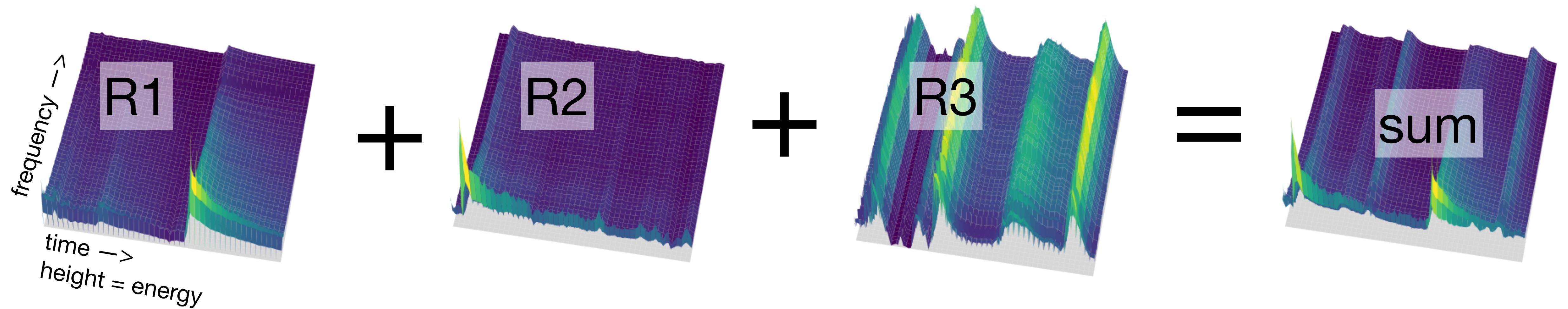


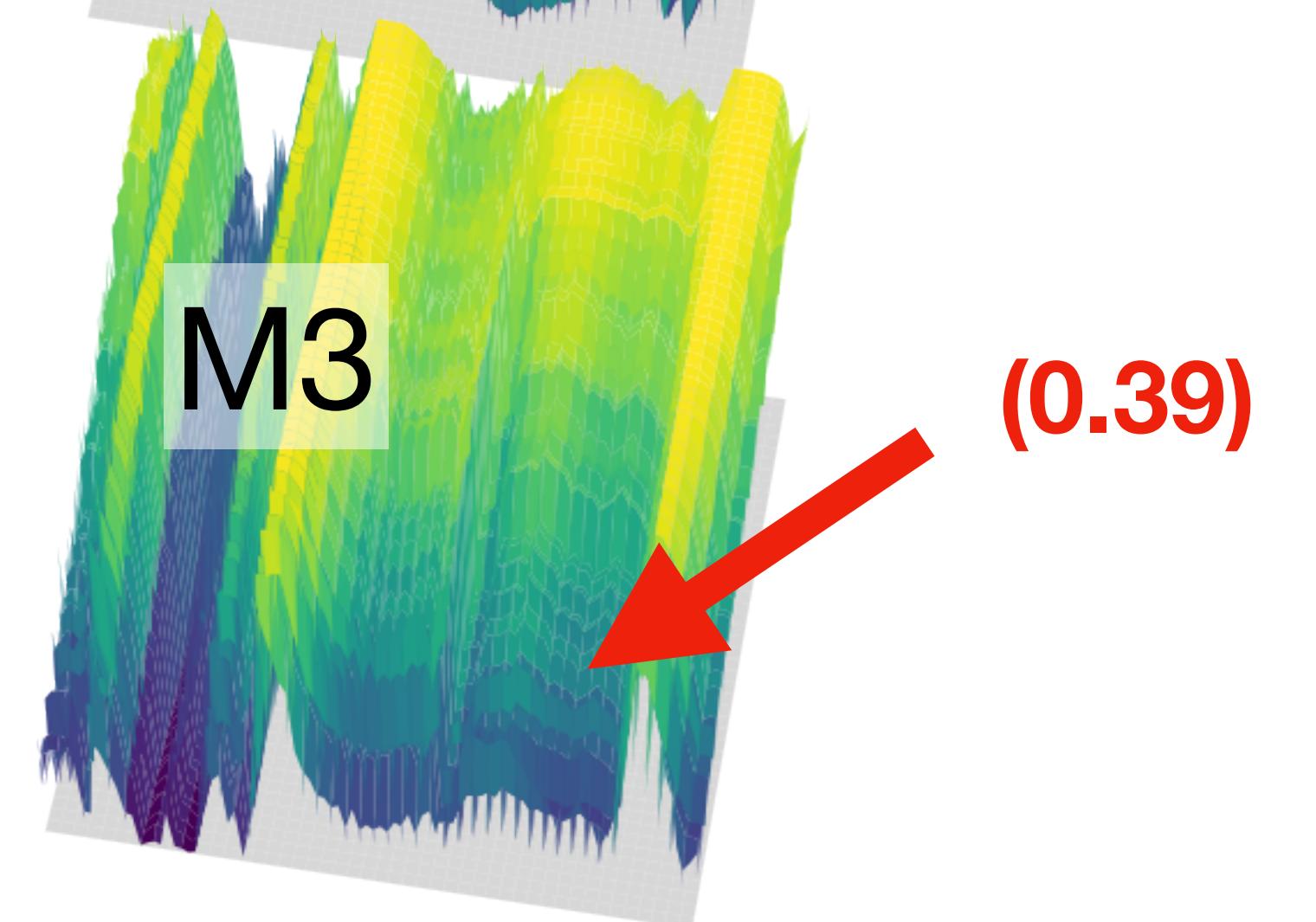
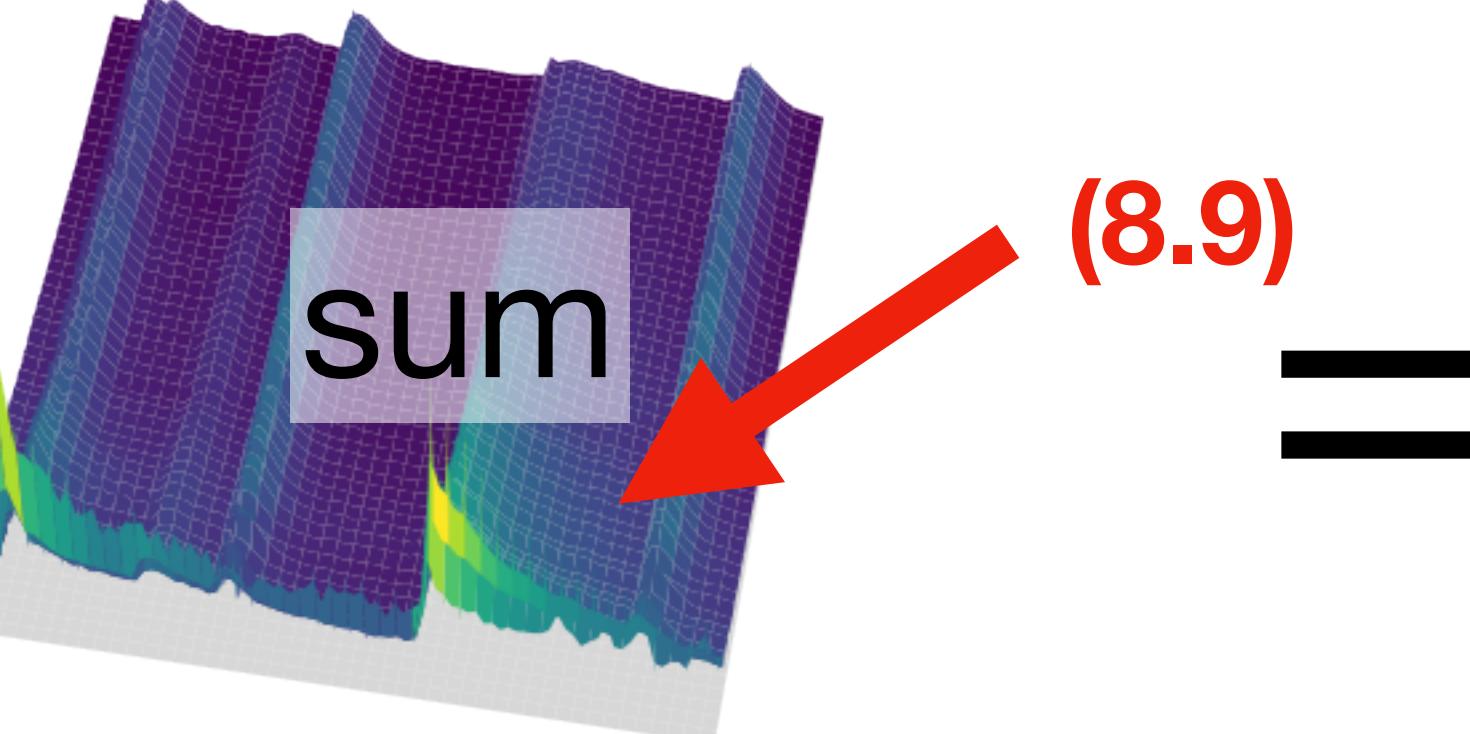
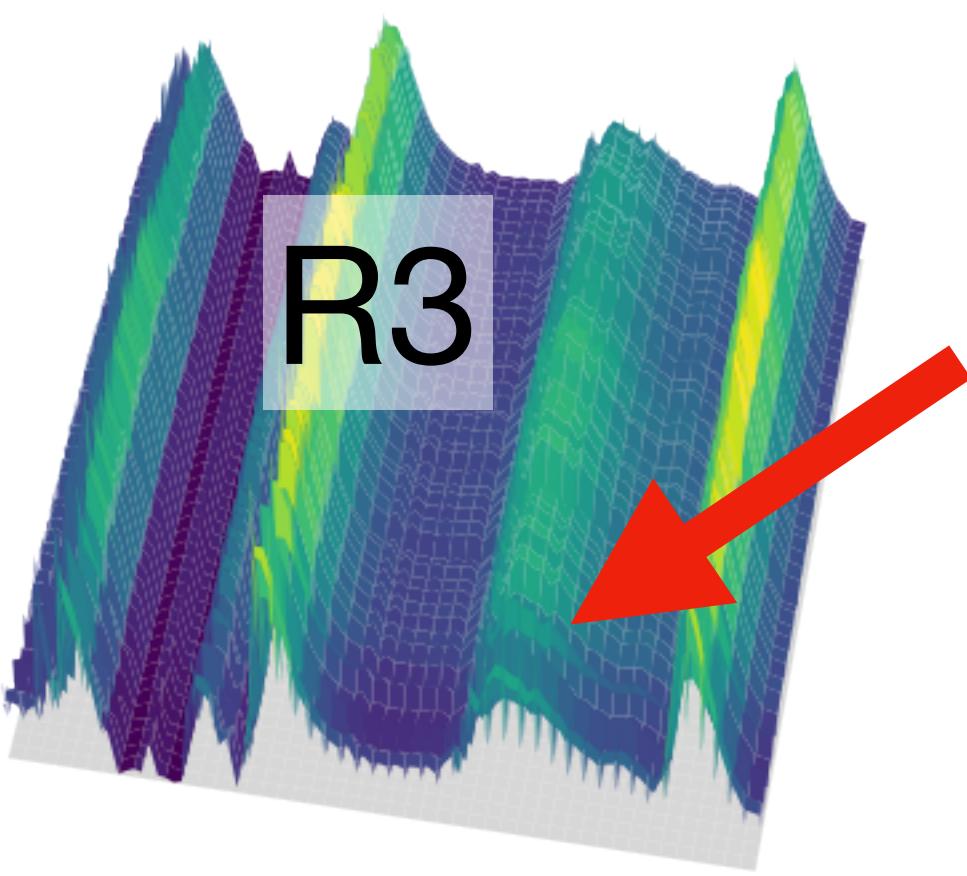
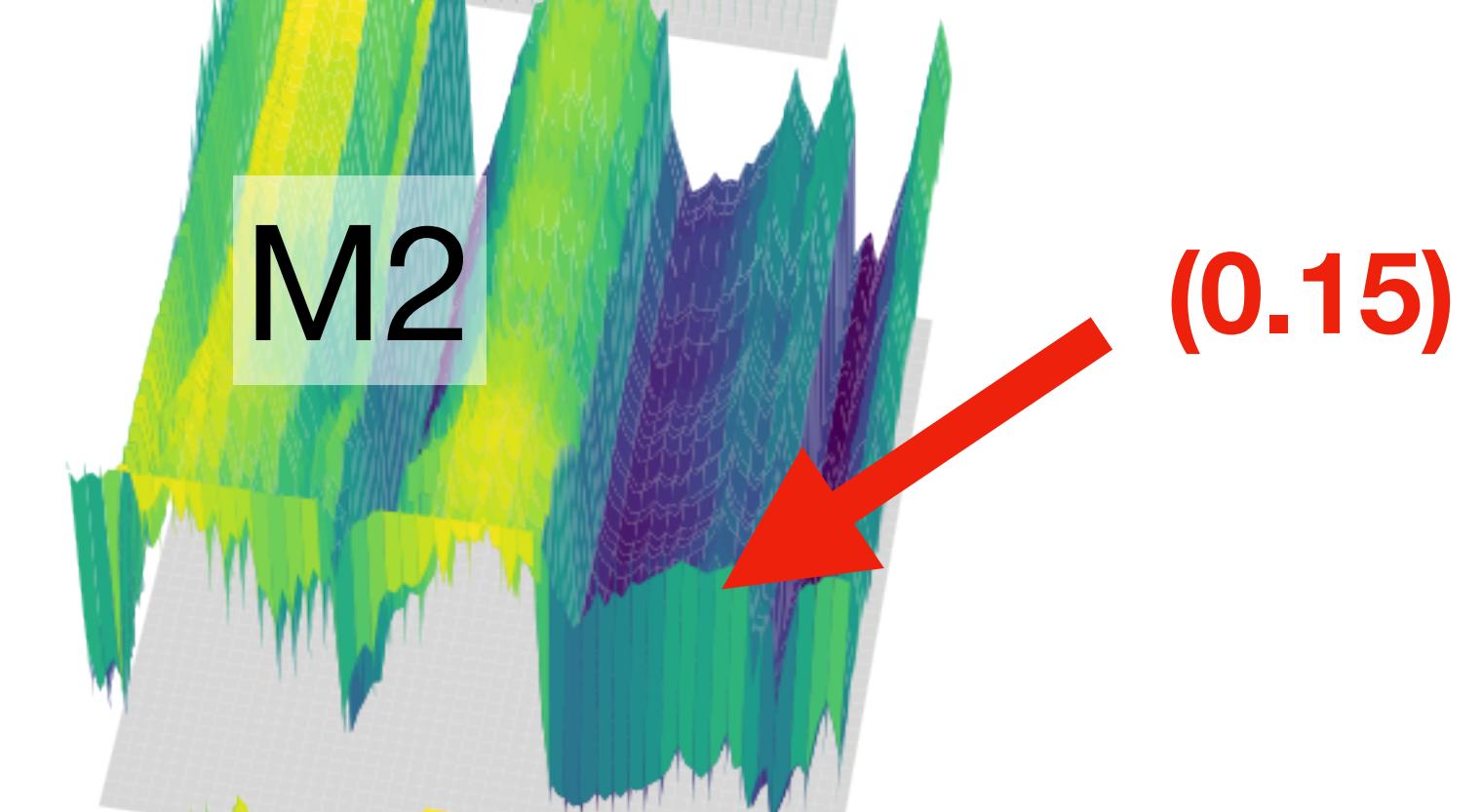
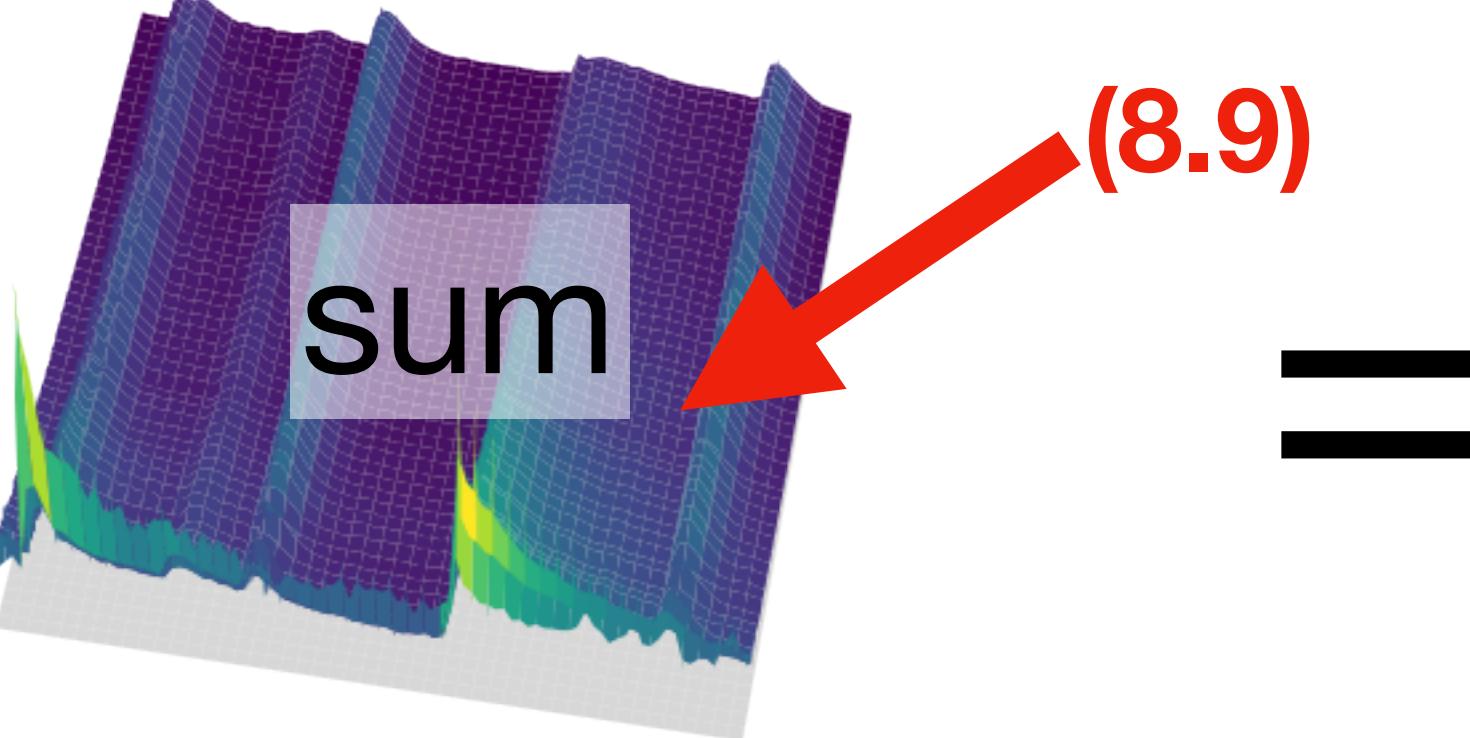
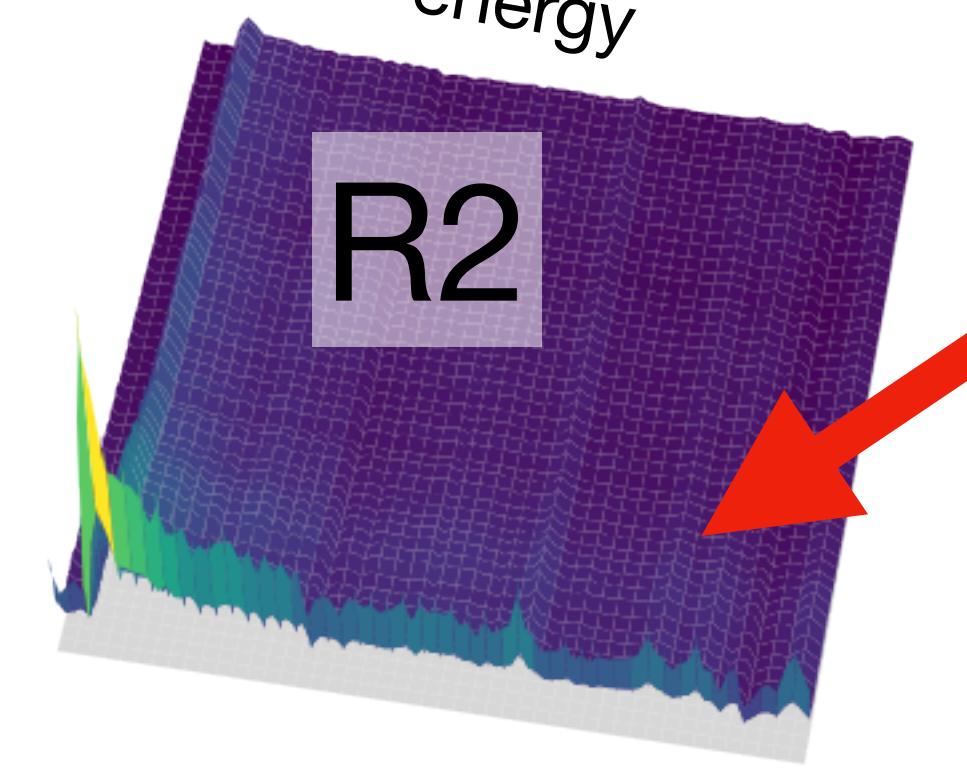
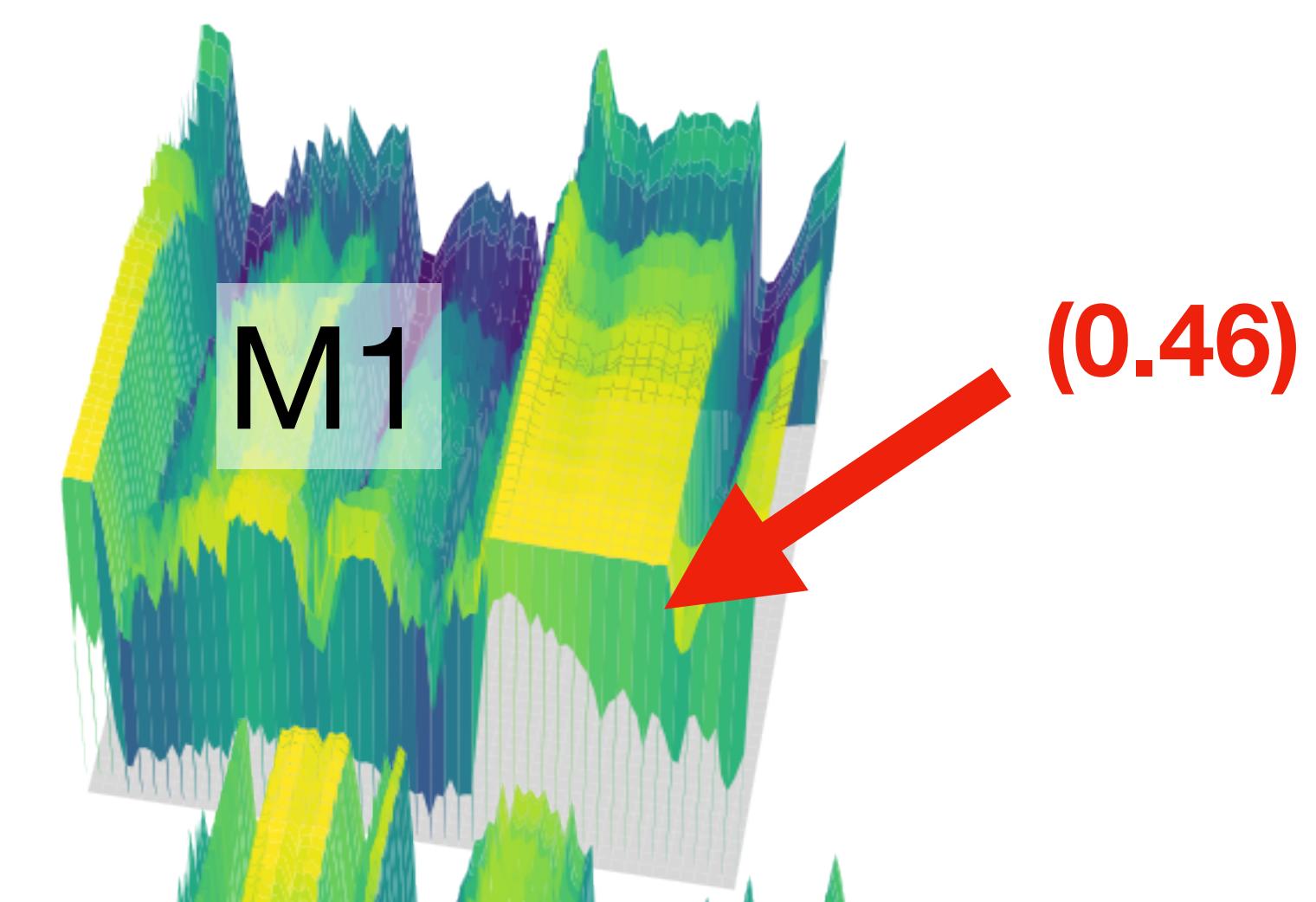
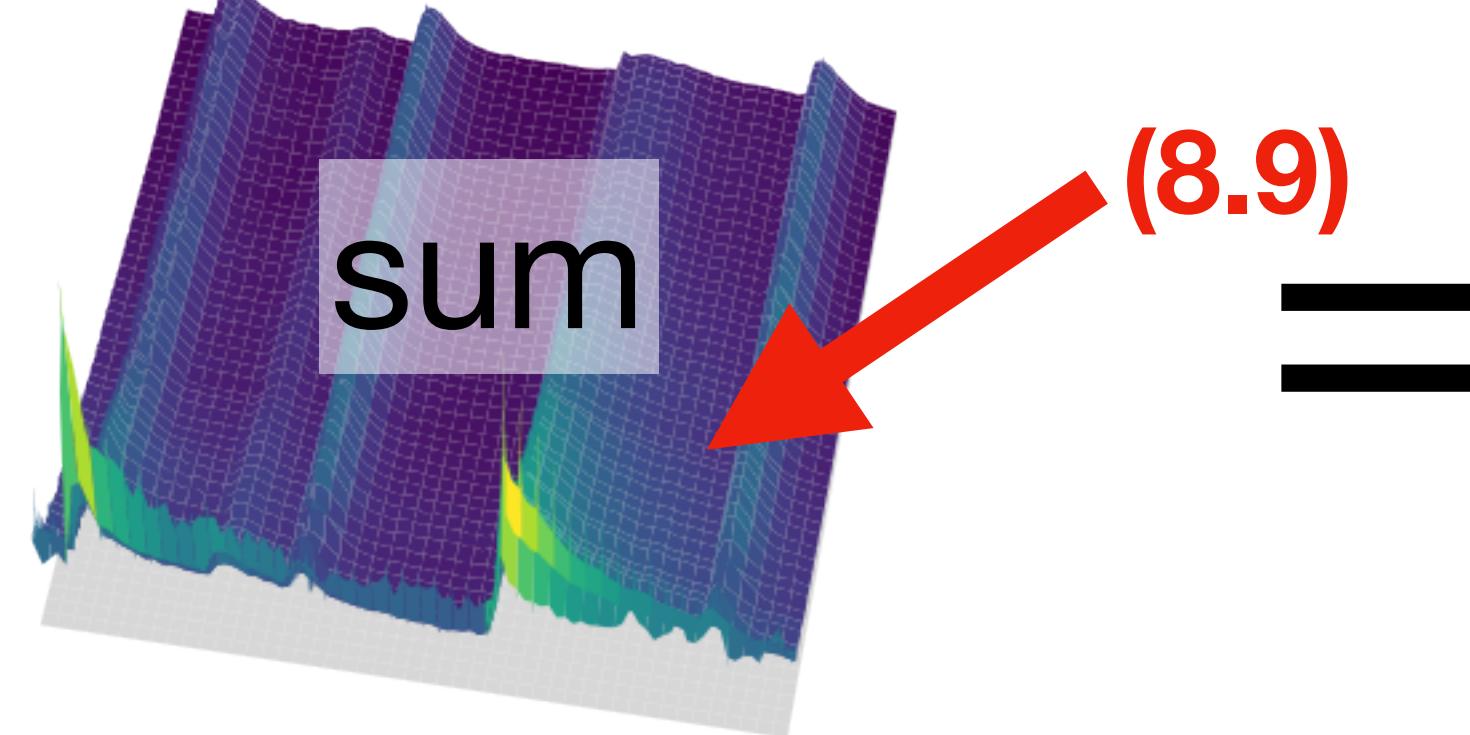
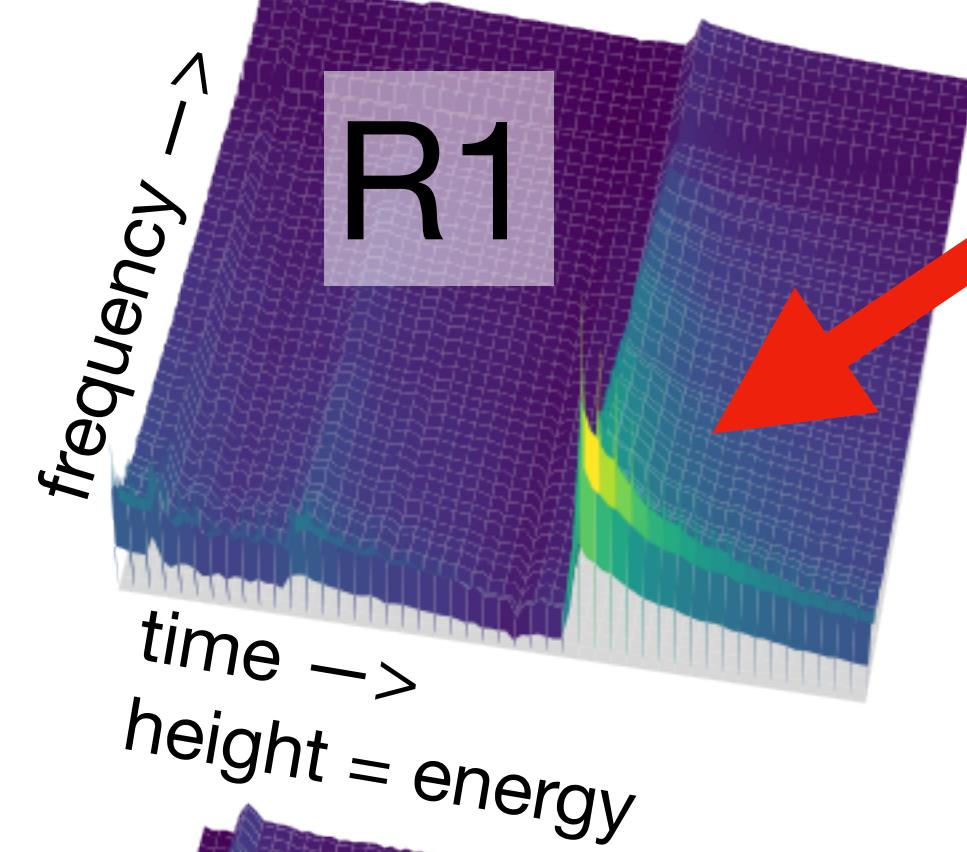
Resynthesizing a Magnitude Matrix:

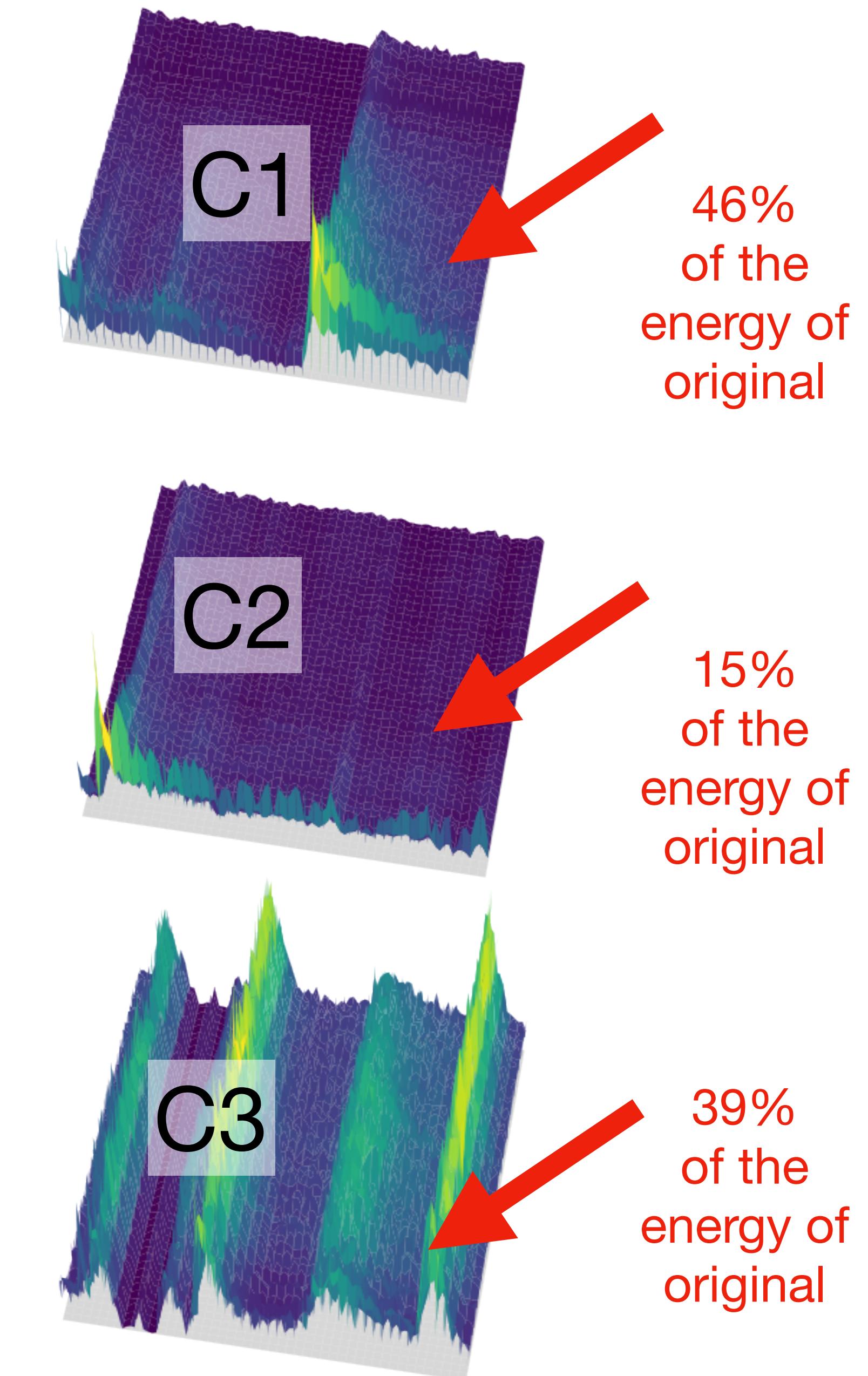
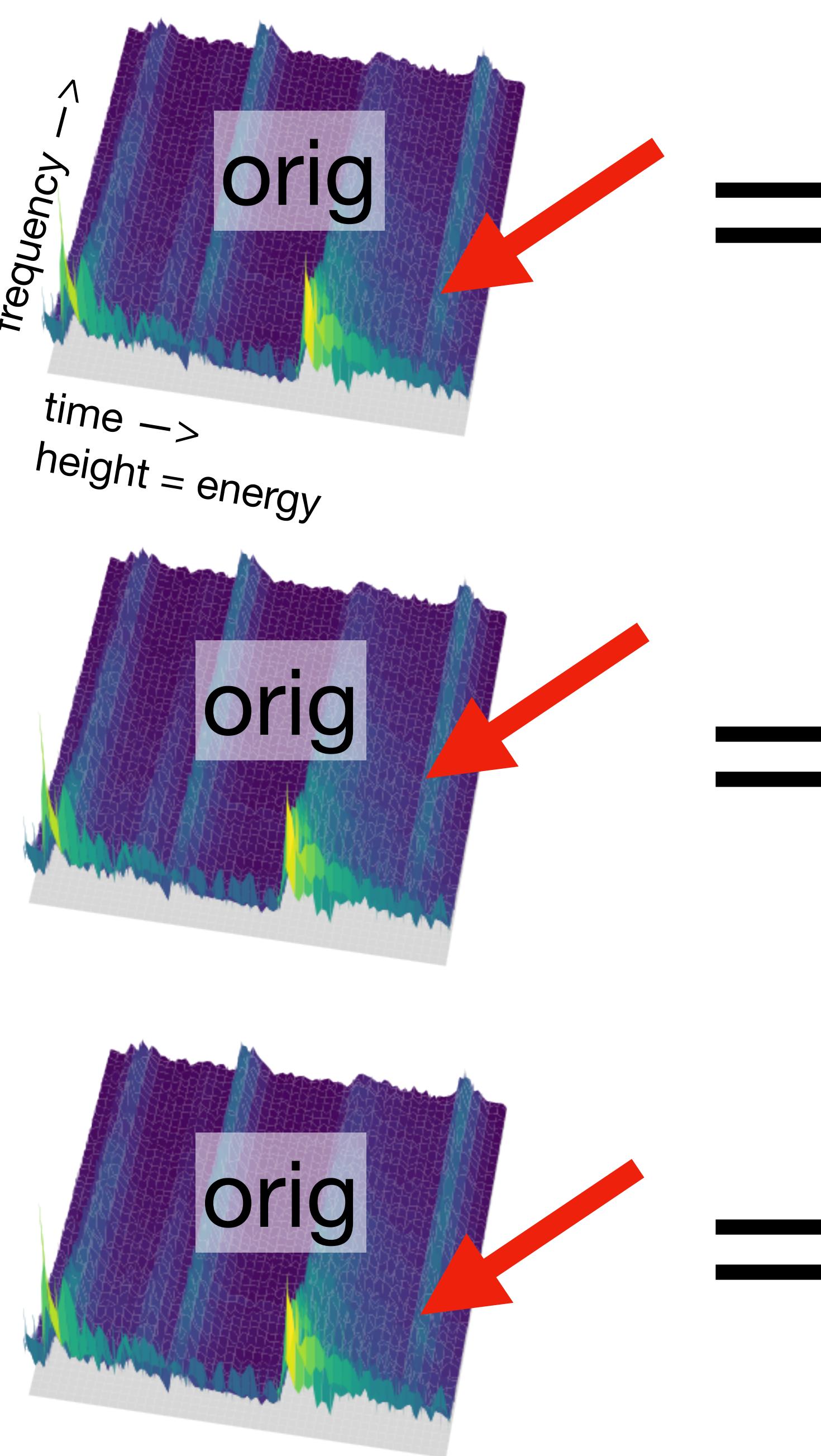
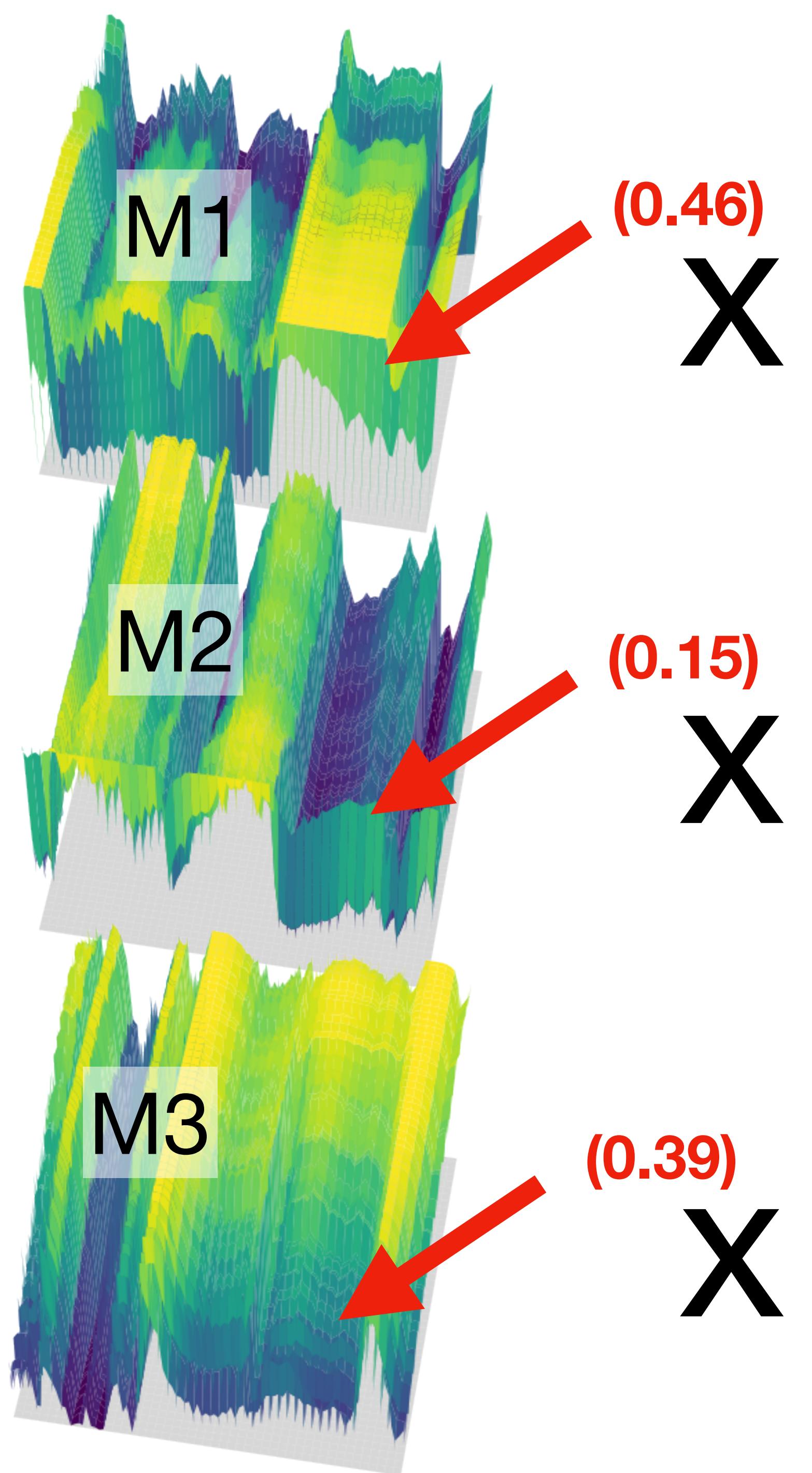
'outer product' of the
basis & activation vectors



The 3 Resynthesized Magnitude Matrices:









Herbig-Haro
by Olivier Pasquet

learn.flucoma.org/explore/pasquet