

ABC-Prosodie

This demo provides material to illustrate signal modulations at three characteristically different modulation frequencies. Based on Tillmann's concept of A-, B- and C-Prosodie these are:

A-Prosodie:	Slow	0.5 Hz
B-Prosodie:	Medium	3 Hz
C-Prosodie:	Fast	18 Hz

The carrier signal is a simple 400Hz sinusoid.

Three different kinds of modulations are performed at each of the three modulation frequencies:

- (1) Amplitude modulation
- (2) Frequency modulation
- (3) Amplitude and Frequency modulation in parallel.

These three modulations are of course not intended to be exhaustive. Particularly if the carrier signal were more complex (e.g a synthetic vowel) then there would be many other possibilities (e.g modulation of formant frequencies).

There are also three variations on the shape of the modulation function:

- (1) “Straight” Simple repeating sinusoid
- (2) “Trochee” In each group of two modulation cycles the first cycle is longer and has stronger modulation
- (3) “Swing” Similar to “Trochee”, but the shorter cycle has stronger modulation.

The names of these modulation shapes have been based on their effect at the B-Prosodie level, i.e a change in the weight or salience of successive “syllables” or beats. But these modulation shapes have been systematically applied to the A- and C-levels, too. At the A-Prosodie level they are easy enough to follow. Is this still true at the C-level?

How to use the demo:

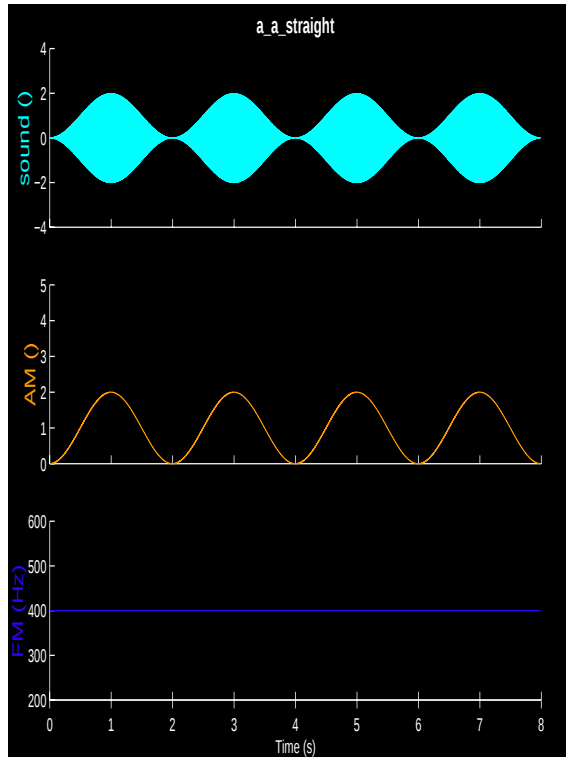
Click on a single cell in the table (e.g the one labelled ‘b_f’ (for B-Prosodie, Frequency modulation)) to play the corresponding sound directly (does not yet work on Linux systems).

Click on an “f(t)” cell to show the modulations as functions of time for groups of three modulations.

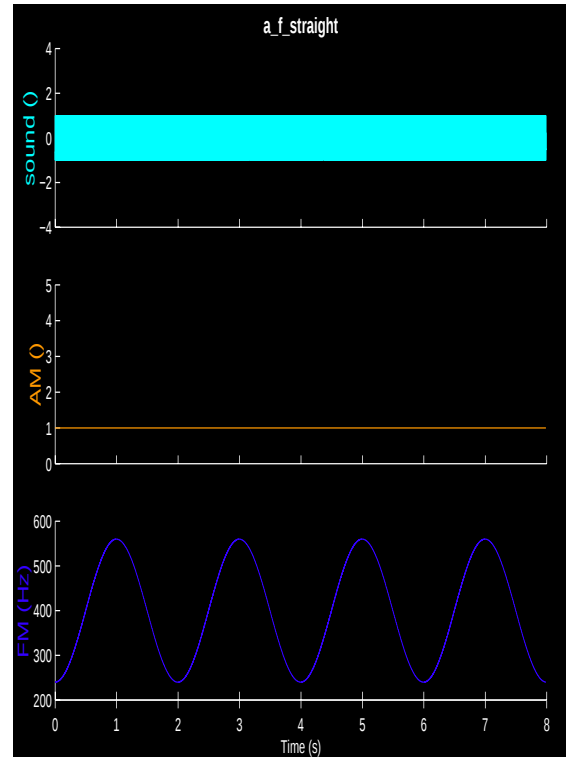
Click on a specific “f(t)” graph to open the corresponding sound in the application to which WAV-files are assigned.

Click on the region below the graphs to return to the table.

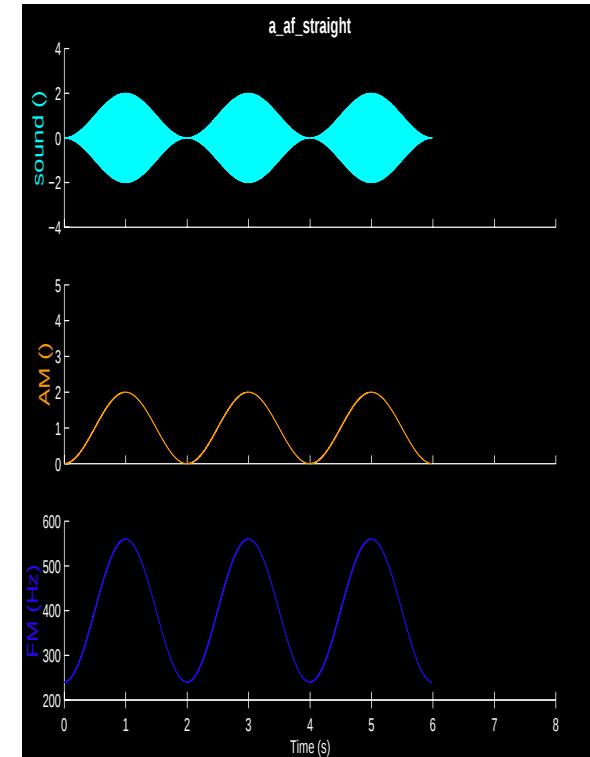
		“Straight”			“Trochee”			“Swing”		
		AM	FM	both	AM	FM	both	AM	FM	both
PROSODY	A	a_a	a_f	a_af	a_a	a_f	a_af	a_a	a_f	a_af
		f(t)			f(t)			f(t)		
	B	b_a	b_f	b_af	b_a	b_f	b_af	b_a	b_f	b_af
		f(t)			f(t)			f(t)		
	C	c_a	c_f	c_af	c_a	c_f	c_af	c_a	c_f	c_af
		f(t)			f(t)			f(t)		
	A+B	ab_a	ab_f	ab_af	ab_a	ab_f	ab_af	ab_a	ab_f	ab_af
		f(t)			f(t)			f(t)		
	A+B+C	abc_a	abc_f	abc_af	abc_a	abc_f	abc_af	abc_a	abc_f	abc_af
		f(t)			f(t)			f(t)		



Amplitude Modulation

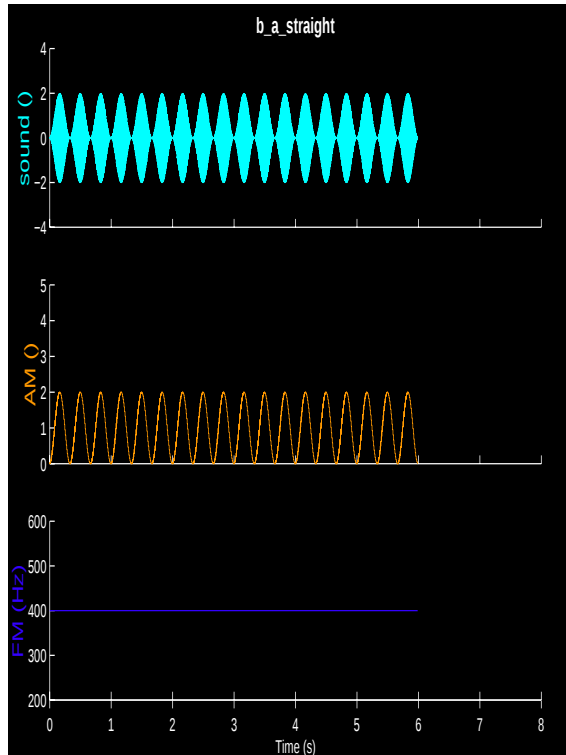


Frequency Modulation

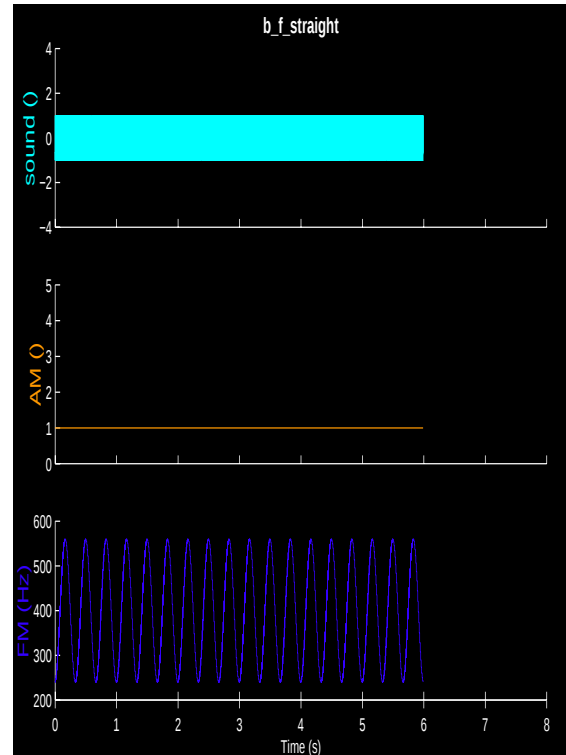


AM and FM

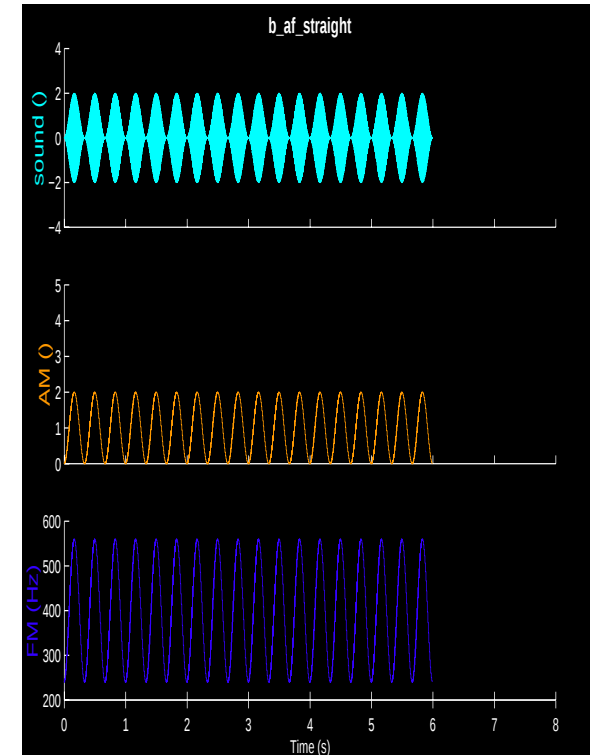
A-Prosodie
Modulation Shape: “Straight”



Amplitude Modulation

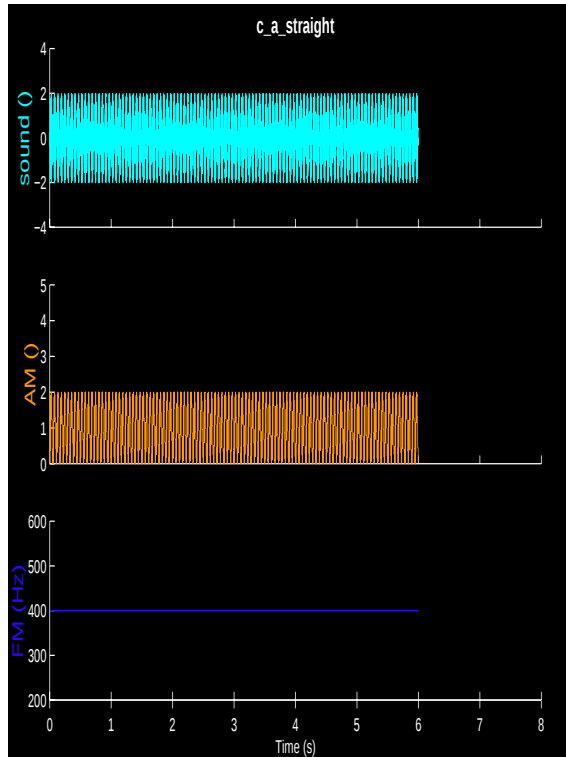


Frequency Modulation

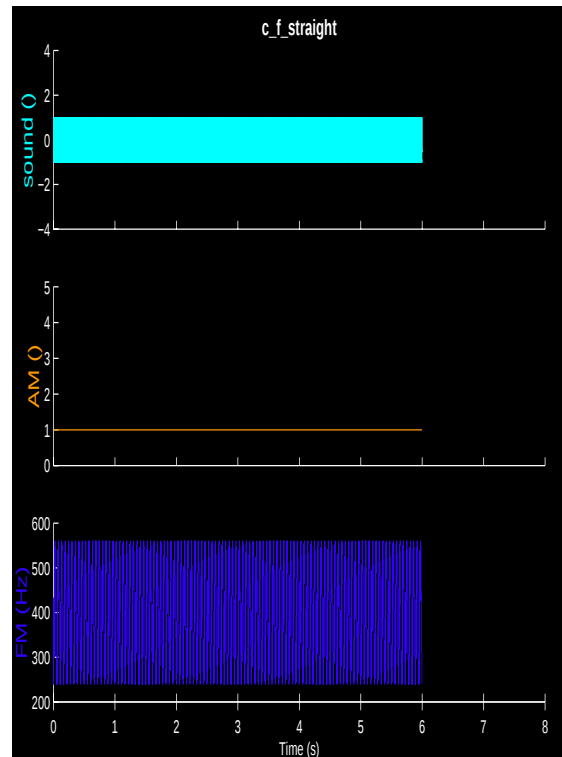


AM and FM

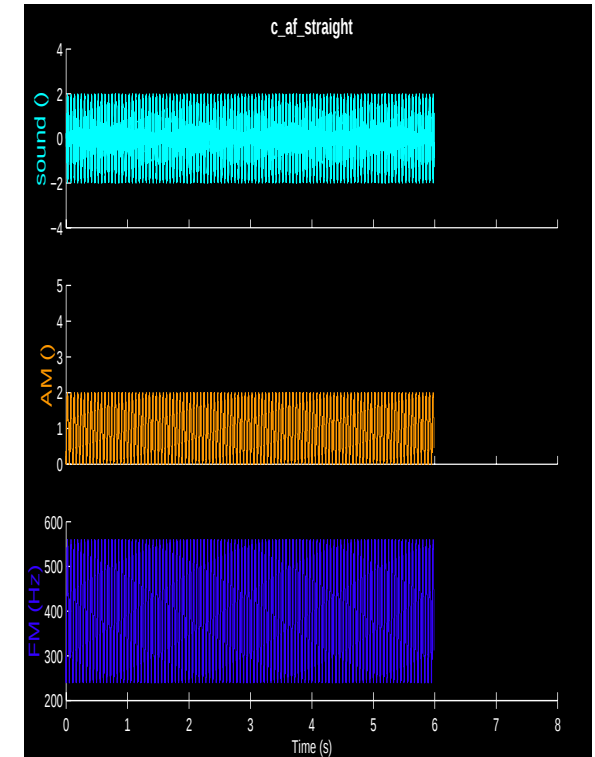
B-Prosodie
Modulation Shape: “Straight”



Amplitude Modulation

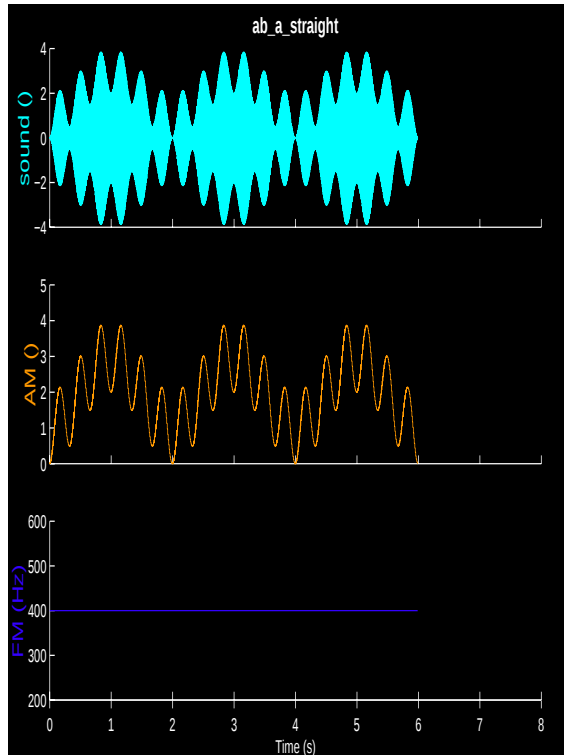


Frequency Modulation

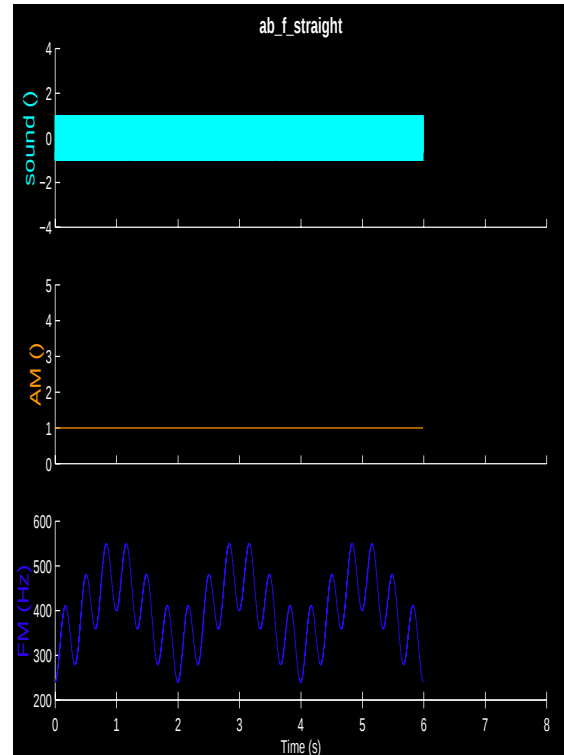


AM and FM

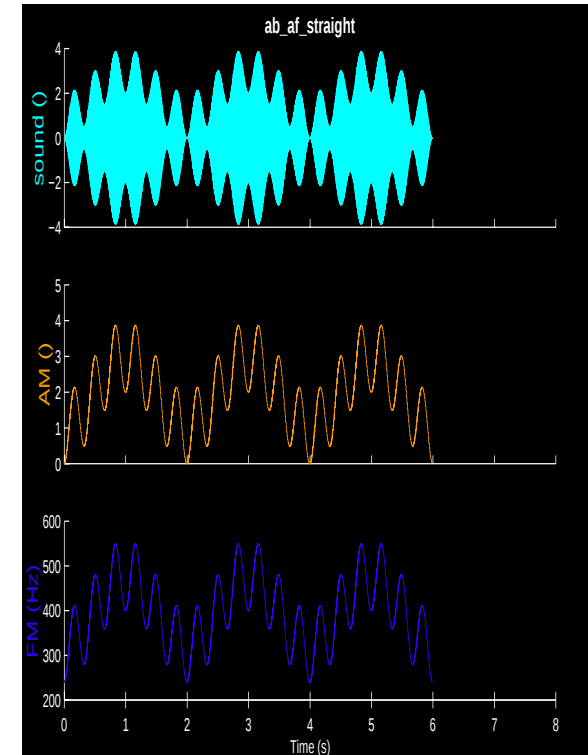
C-Prosodie
Modulation Shape: “Straight”



Amplitude Modulation

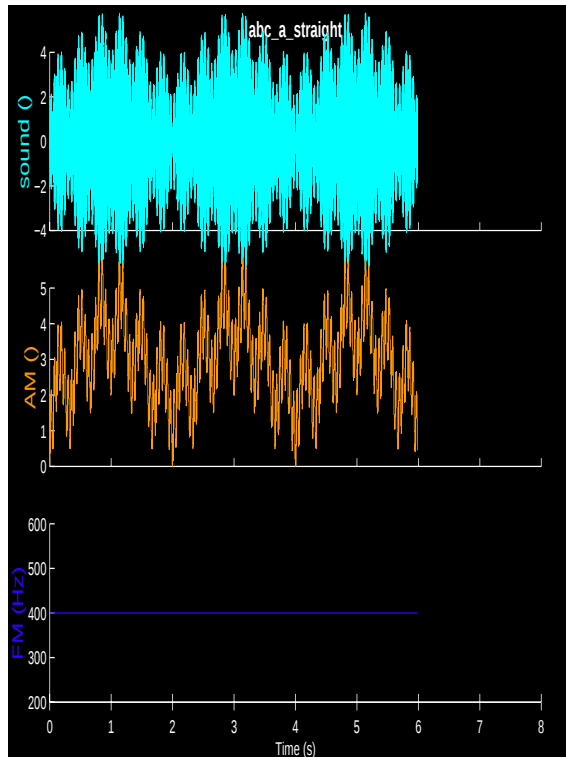


Frequency Modulation

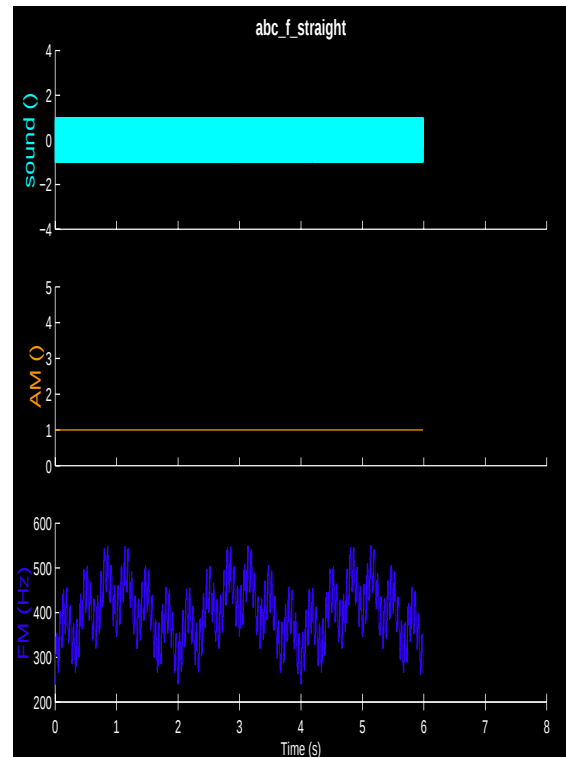


AM and FM

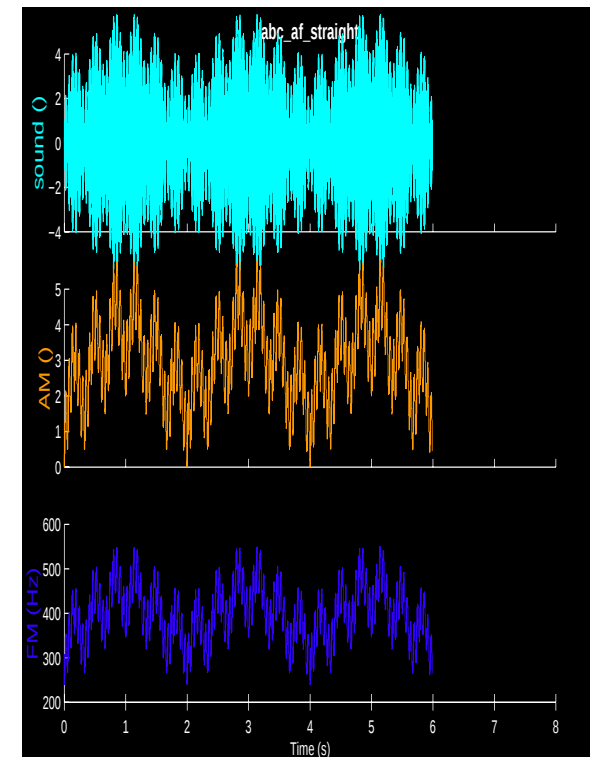
A- plus B-Prosodie
Modulation Shape: “Straight”



Amplitude Modulation

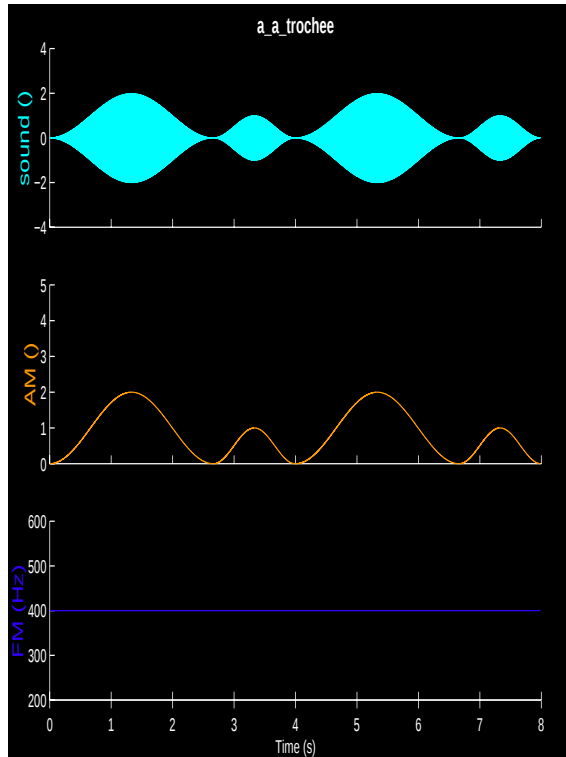


Frequency Modulation

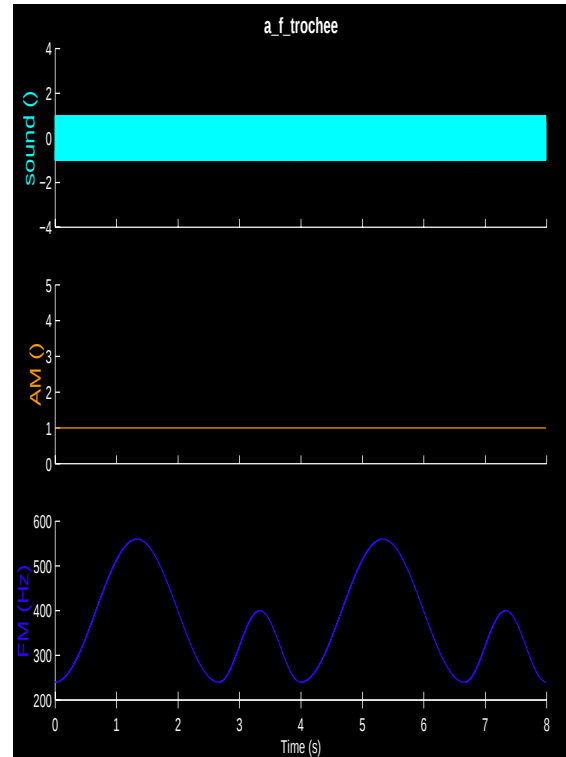


AM and FM

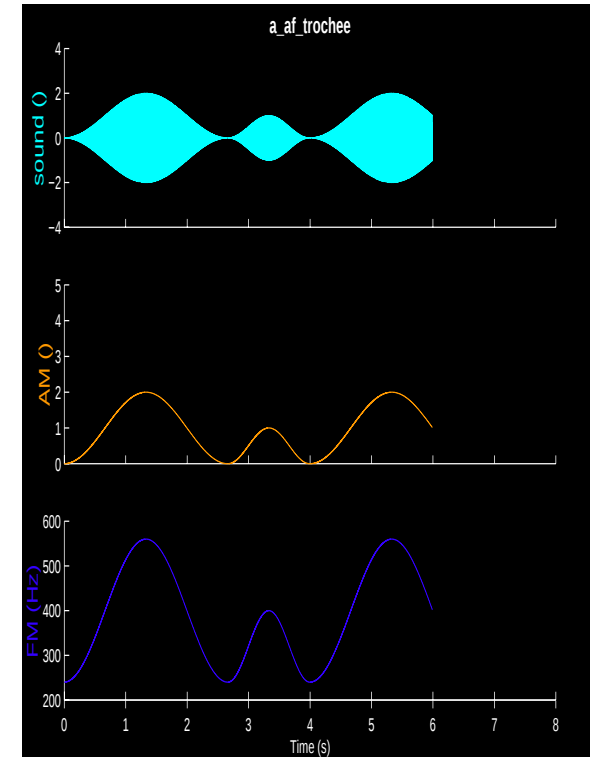
A- plus B- plus C-Prosodie
Modulation Shape: “Straight”



Amplitude Modulation

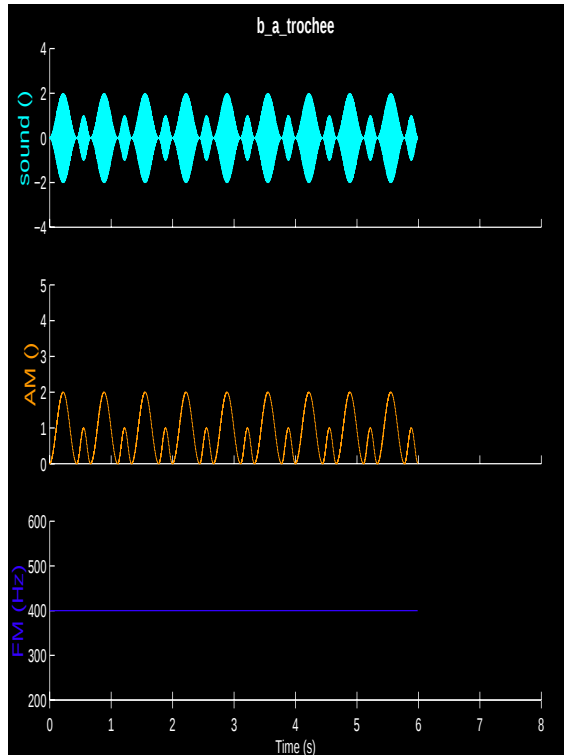


Frequency Modulation

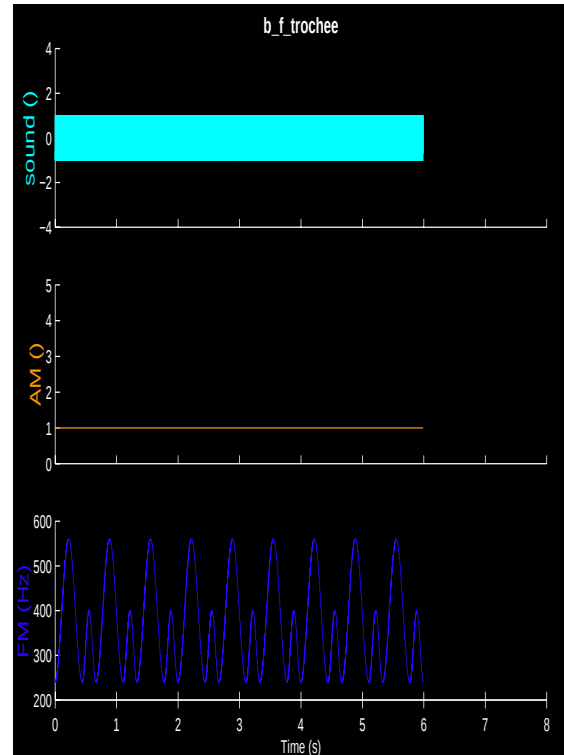


AM and FM

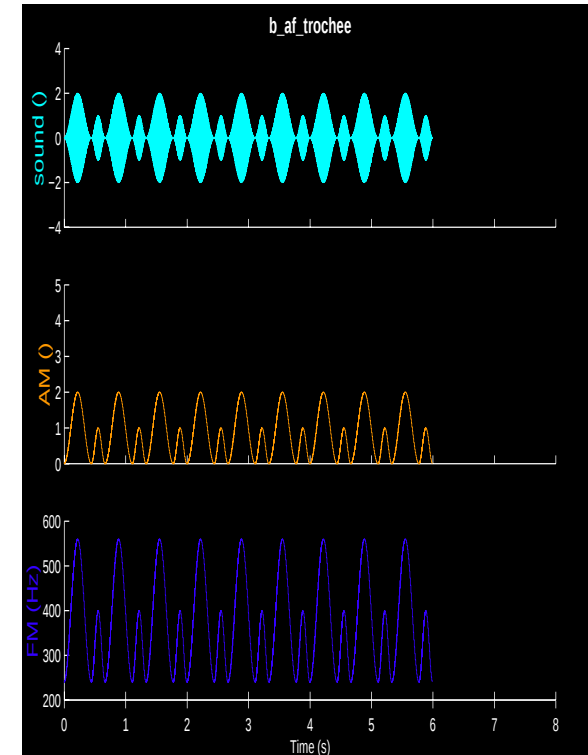
A-Prosodie
Modulation Shape: “Trochee”



Amplitude Modulation

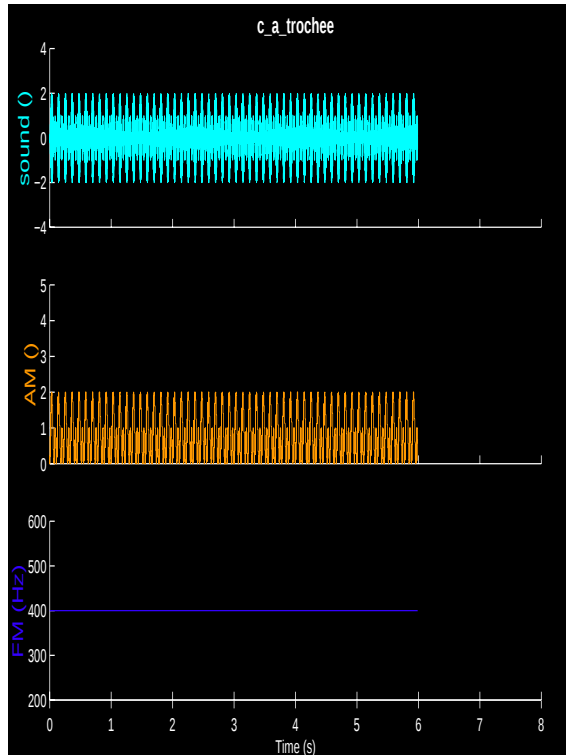


Frequency Modulation

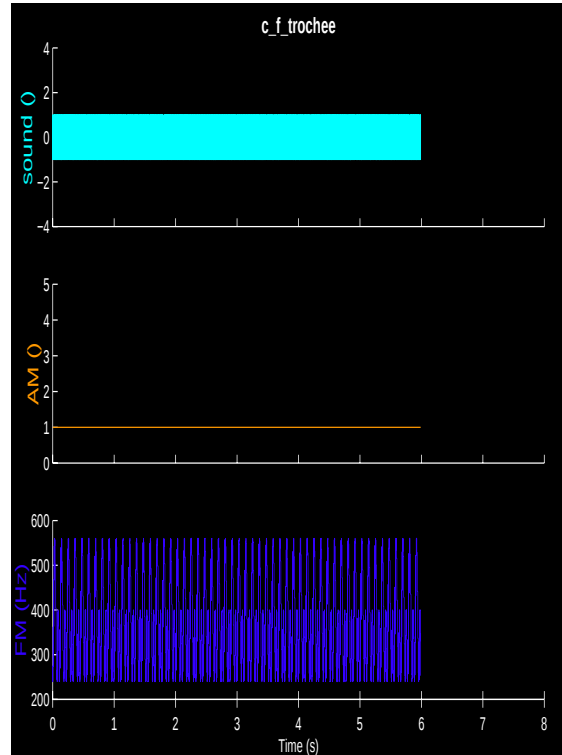


AM and FM

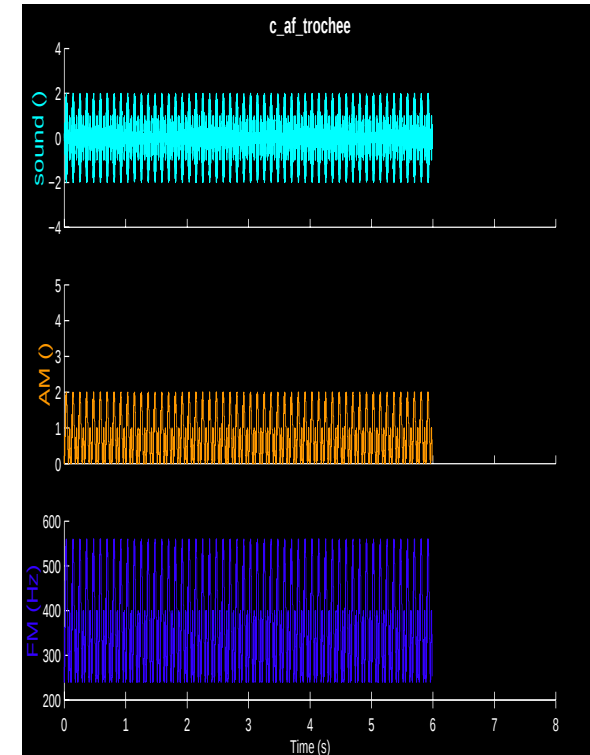
B-Prosodie
Modulation Shape: “Trochee”



Amplitude Modulation

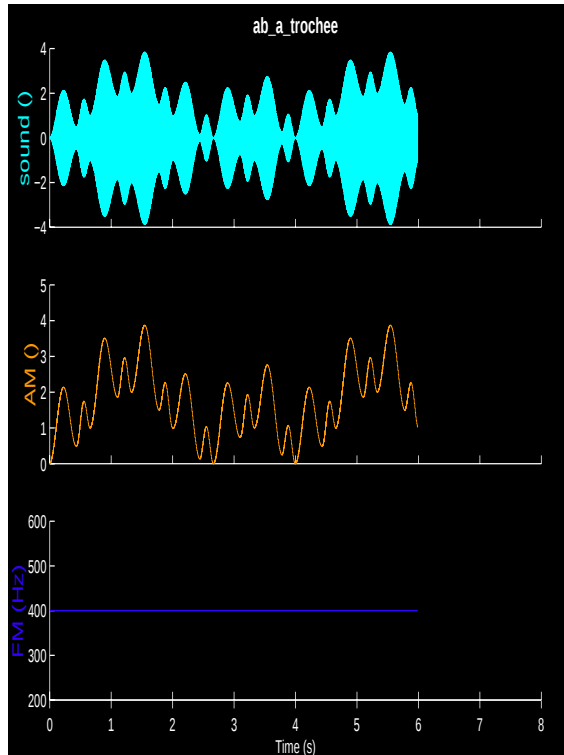


Frequency Modulation

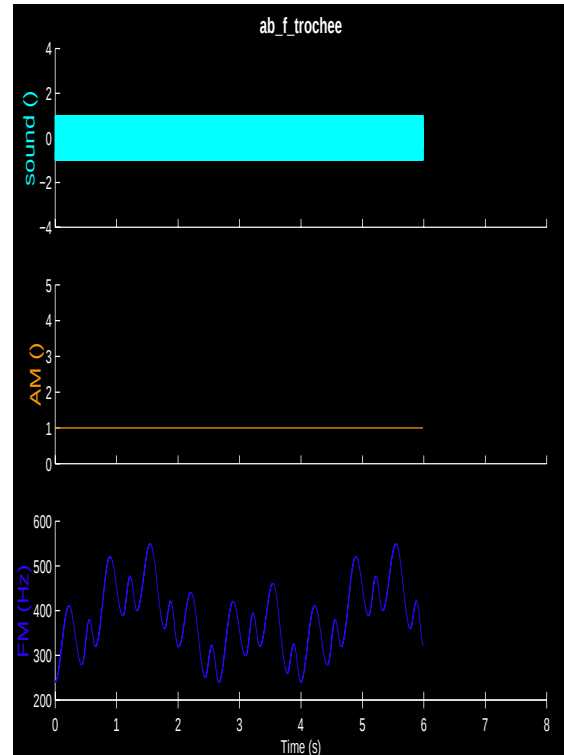


AM and FM

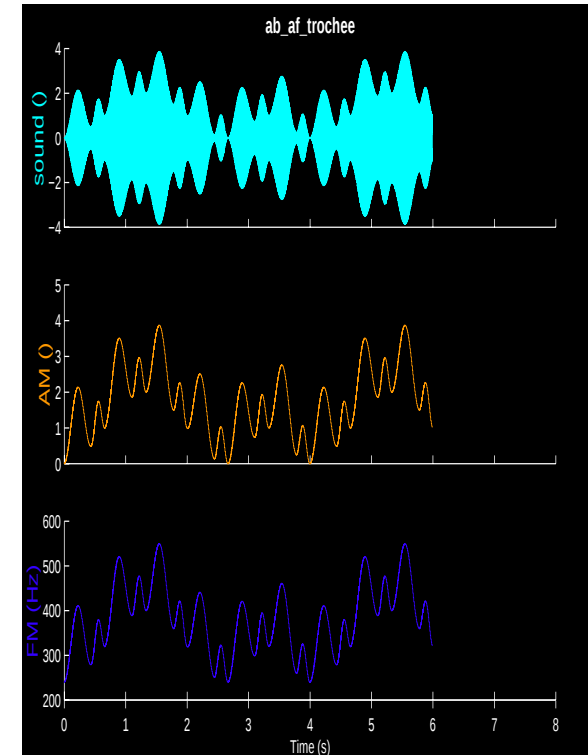
C-Prosodie
Modulation Shape: “Trochee”



Amplitude Modulation

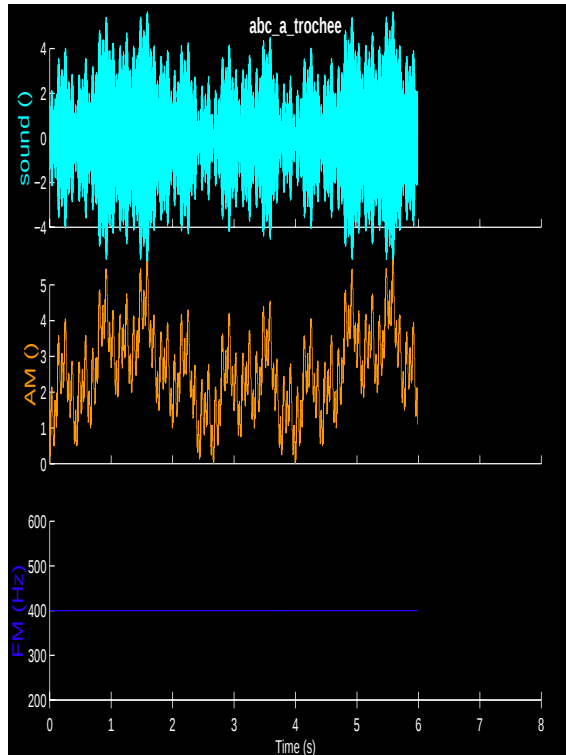


Frequency Modulation

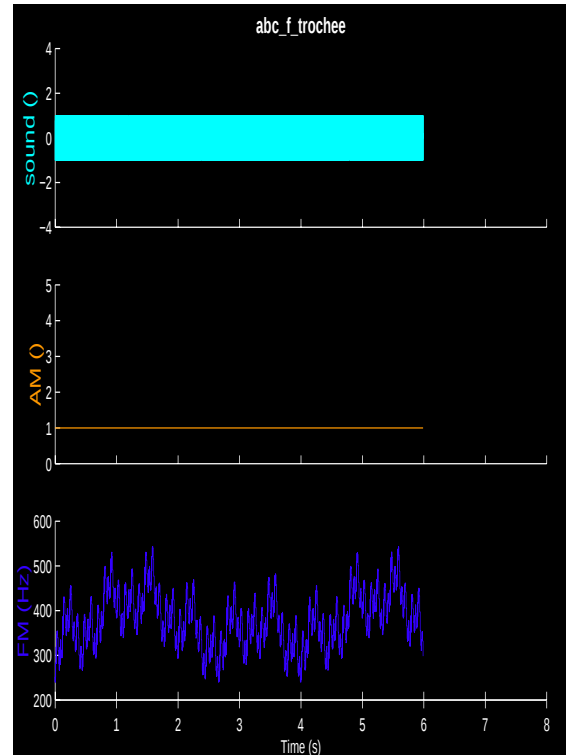


AM and FM

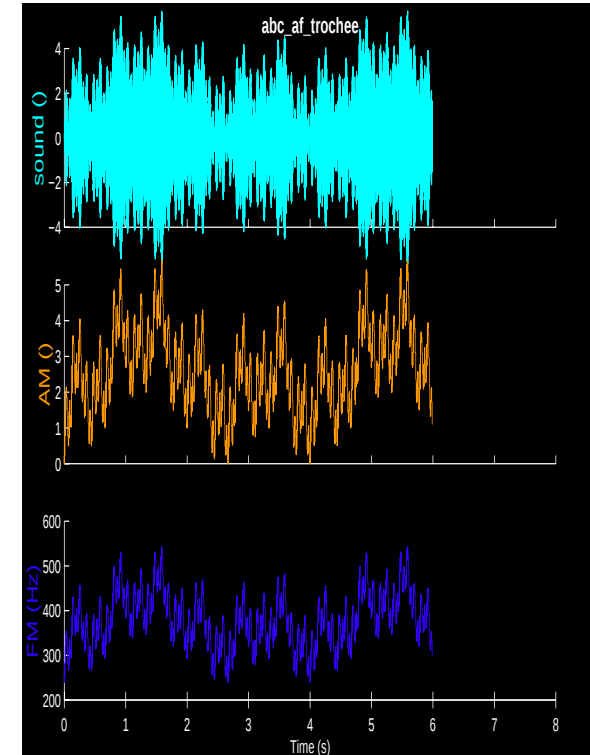
A- plus B-Prosodie
 Modulation Shape: “Trochee”



Amplitude Modulation

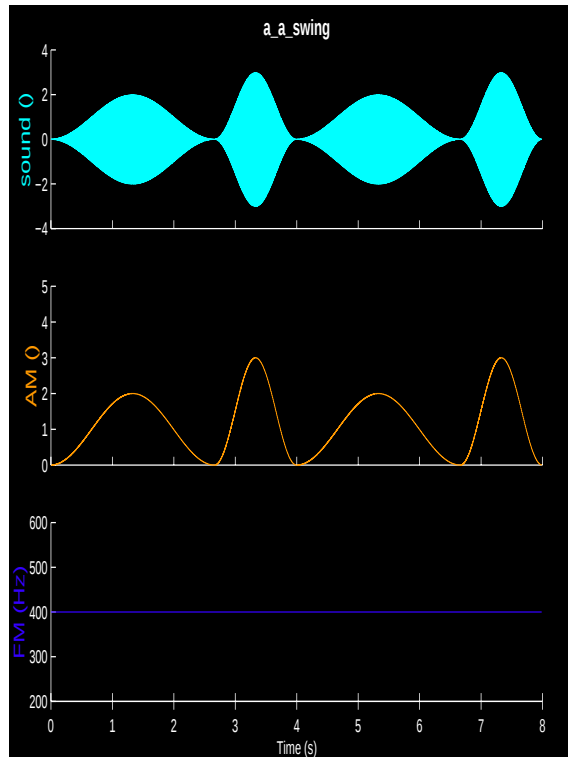


Frequency Modulation

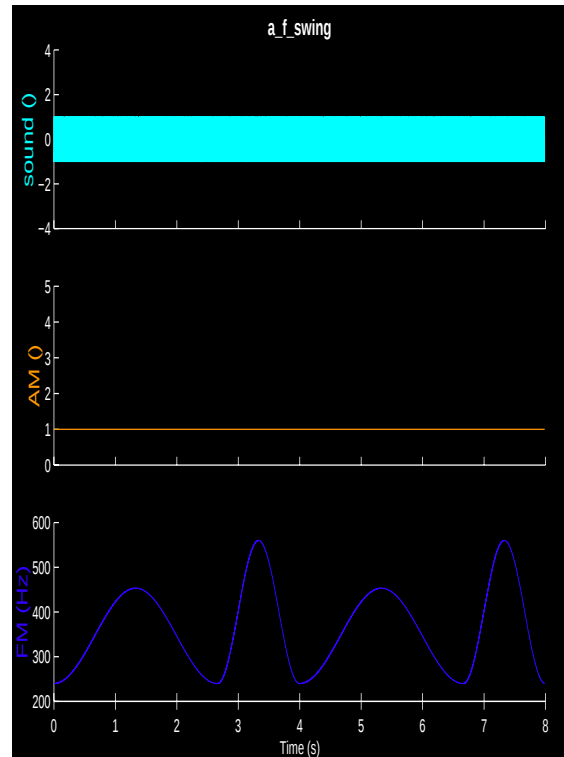


AM and FM

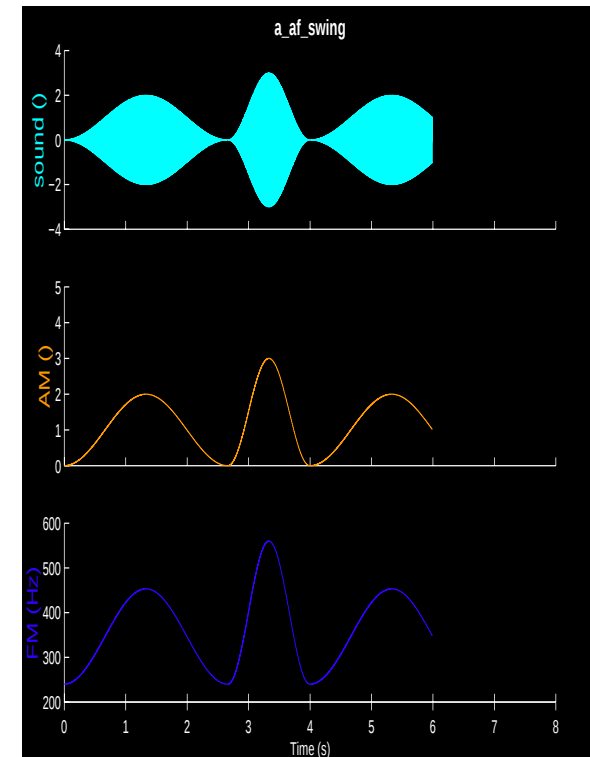
A- plus B- plus C-Prosodie
 Modulation Shape: “Trochee”



Amplitude Modulation

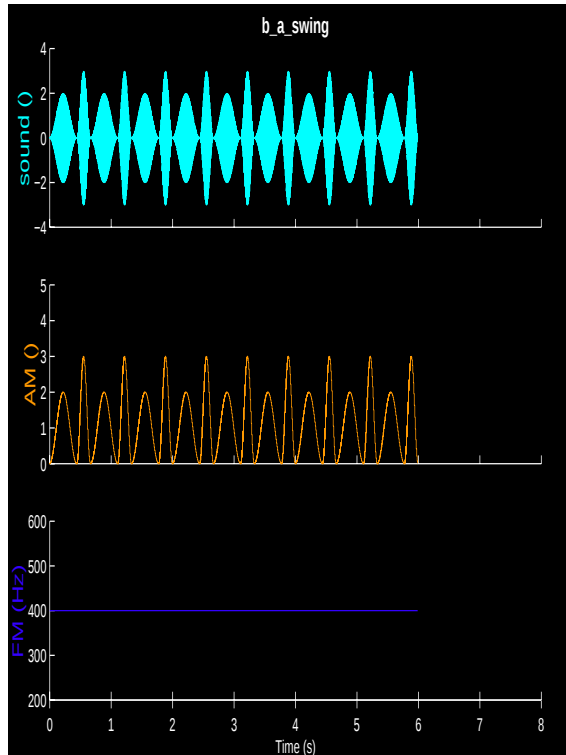


Frequency Modulation

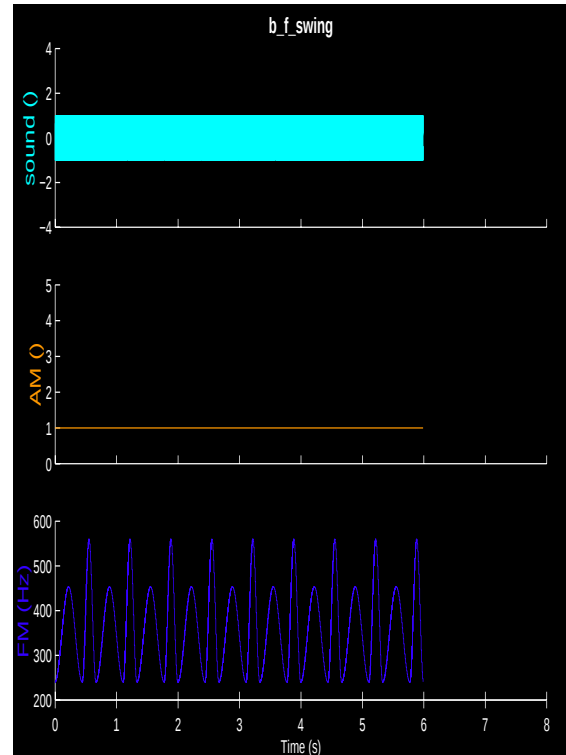


AM and FM

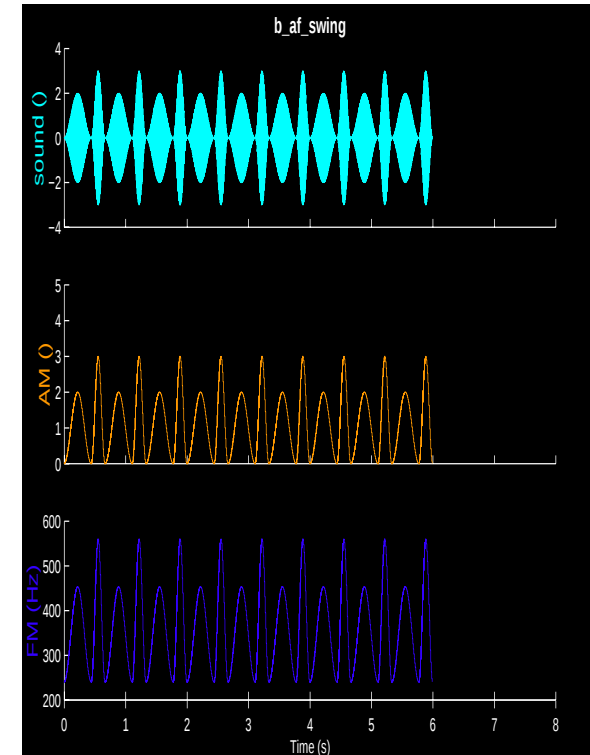
A-Prosodie
Modulation Shape: “Swing”



Amplitude Modulation

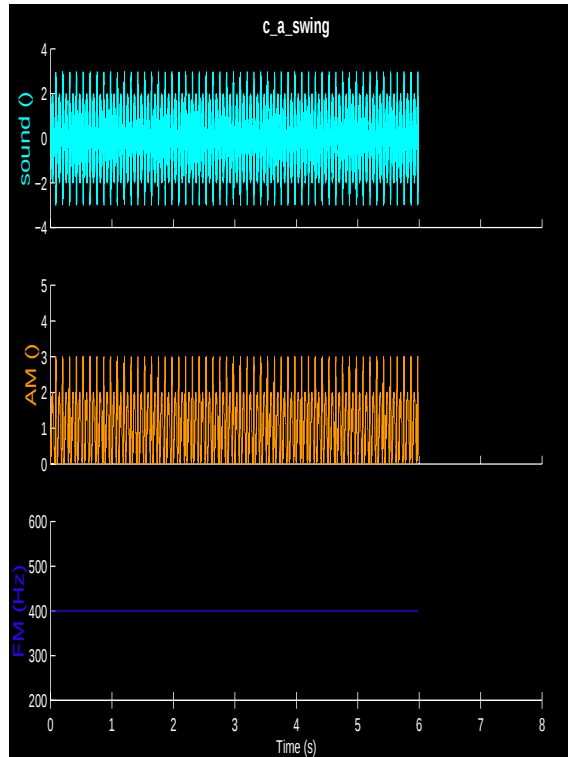


Frequency Modulation

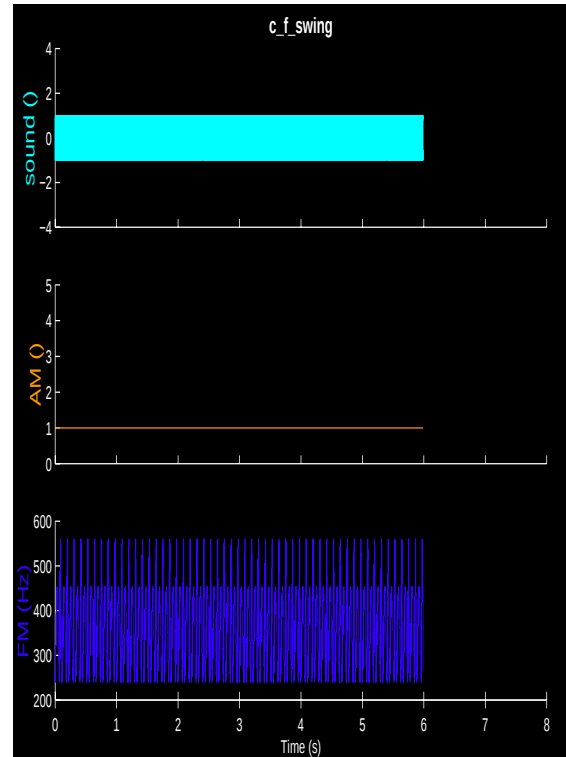


AM and FM

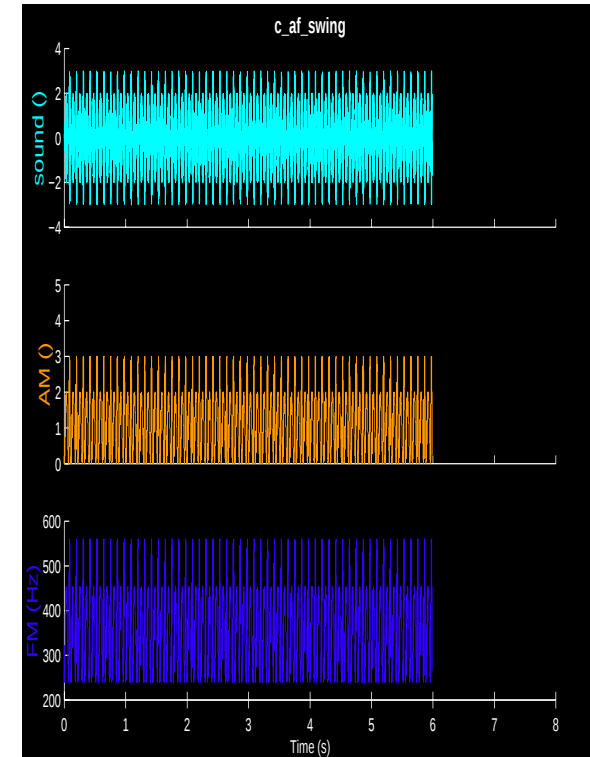
B-Prosodie
Modulation Shape: “Swing”



Amplitude Modulation

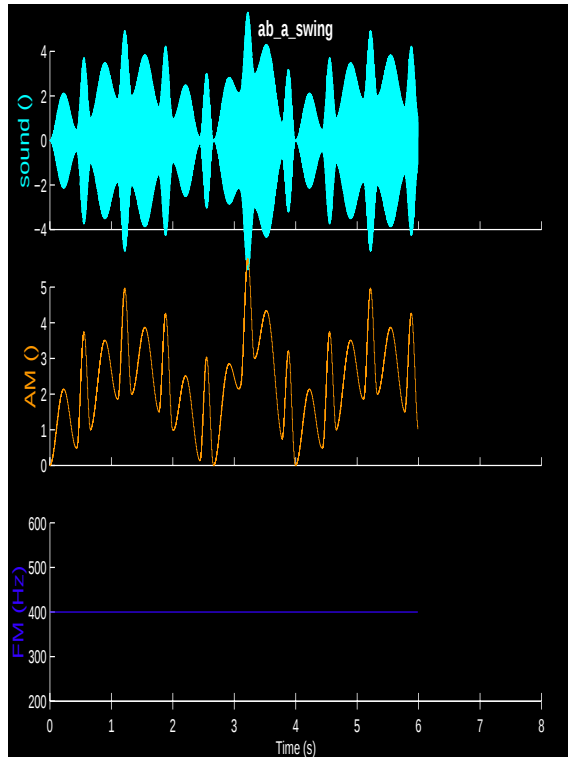


Frequency Modulation

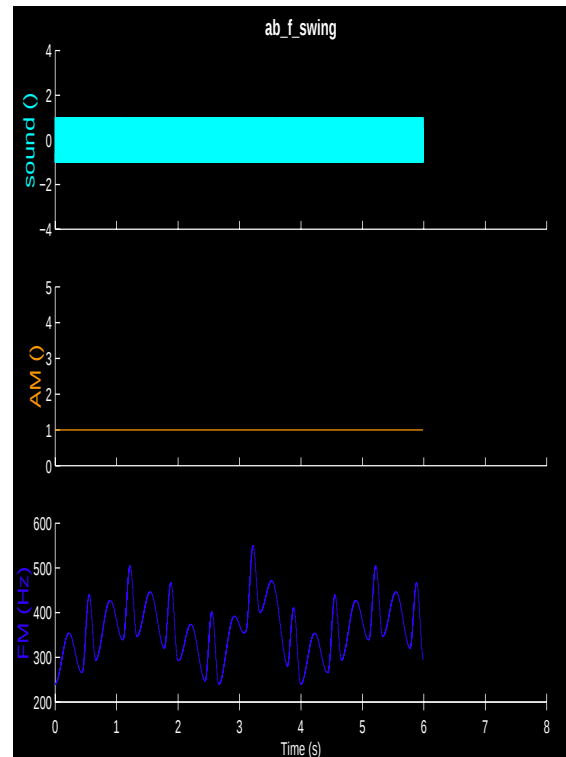


AM and FM

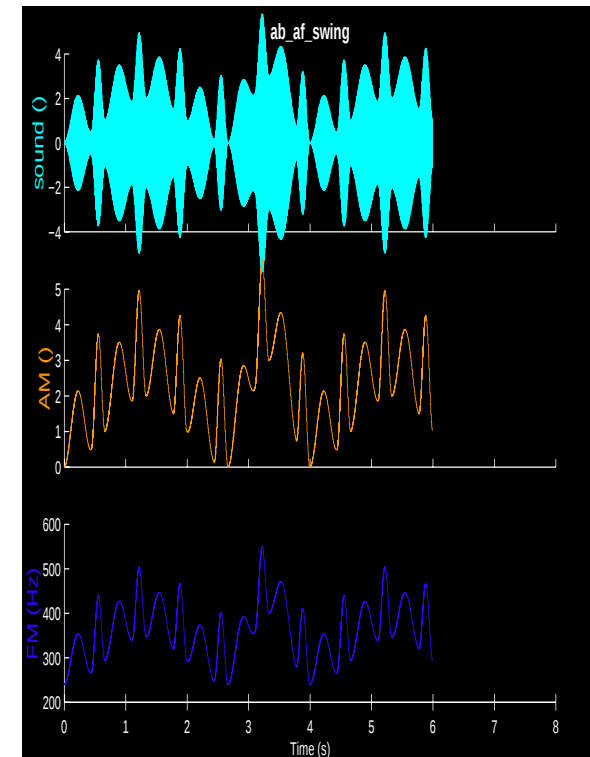
C-Prosodie
Modulation Shape: “Swing”



Amplitude Modulation

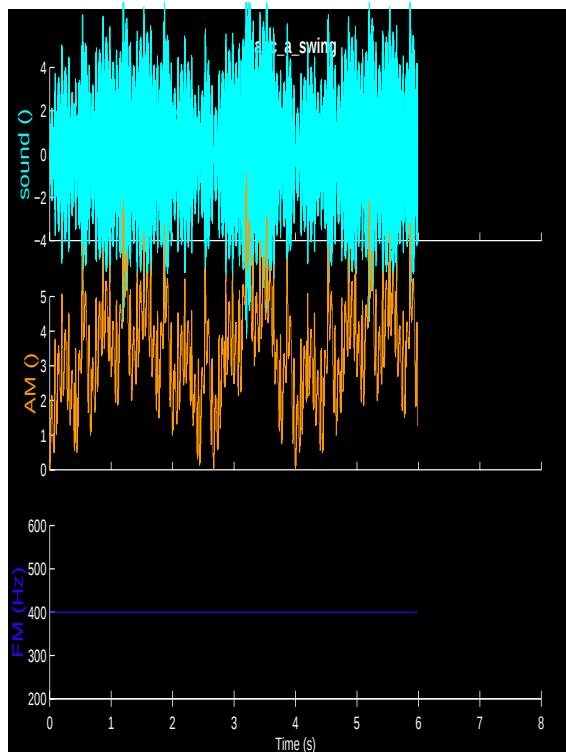


Frequency Modulation

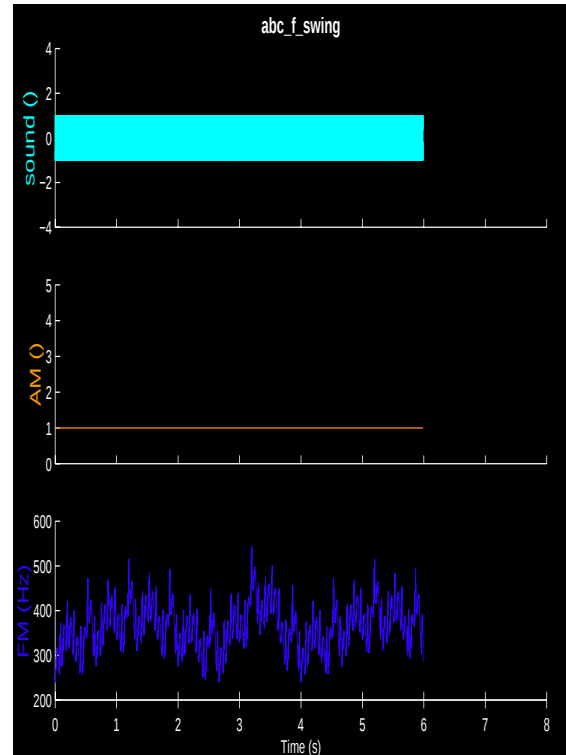


AM and FM

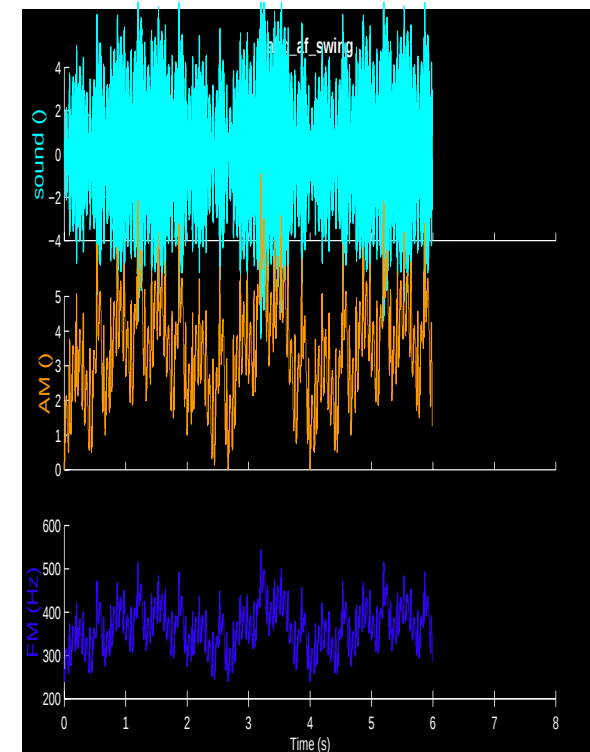
A- plus B-Prosodie
Modulation Shape: “Swing”



Amplitude Modulation



Frequency Modulation



AM and FM

A- plus B- plus C-Prosodie
 Modulation Shape: “Swing”