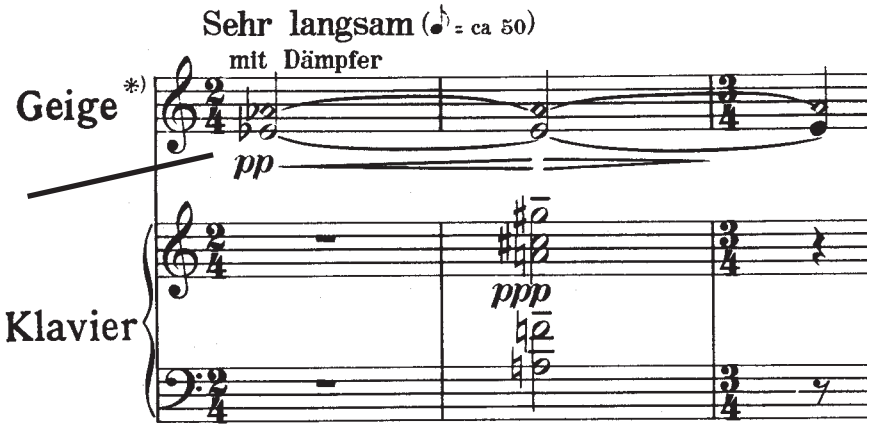
Post-Tonal Fun Pak for 4/19

A. Interval Vector

Let's do an interval vector of the first chord from Webern's Four Pieces for Violin and Piano, Op. 7.

This is an artificial harmonic on violin, makes a very high E♭. A♭ is not a note, it's where you touch the harmonic.



Organize it into a set:

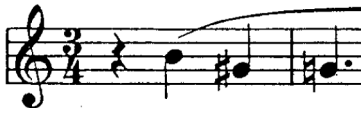
Take an inventory of every interval class in the set. (Look at each pair of pitch classes.)

Organize the total talley of intervals 1-6 into an interval vector:

< , , , , , >

B. Transposition and Inversion (T_nI)

Let's work with the first three notes from Schoenberg's Piano Piece Op. 11



We'll put it in a set:

Let's do a T_2 of it:

Basic inversion in post-tonal music is just I(x) = mod12(-x).

Let's do an I( ) of our original three-note set:

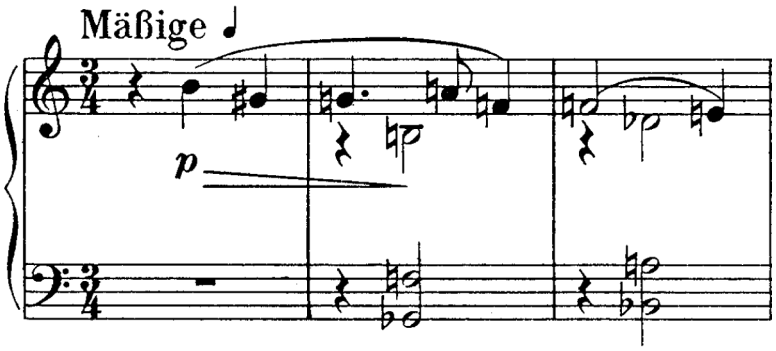
T_nI inverts and then transposes. So we could say T_nI = mod12(-x + n).

We already have everything we need for this analysis, but for practice let's take the original and invert it two more times.

Let's do a T_6I of our original three-note set:

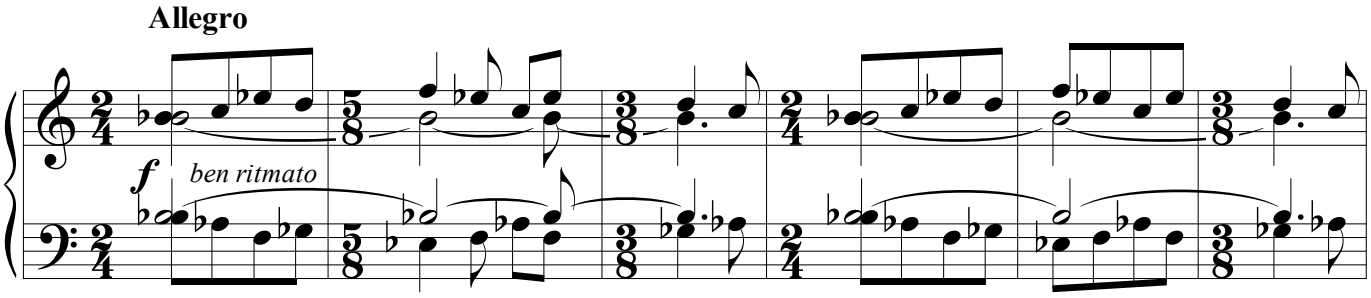
Let's do a T_3I of our original three-note set:

Mark our original three notes, the T_2 version and the I version in this passage. Circle them and give them a PC set label.



More Inversion

Bartok, “Subject and Reflection”

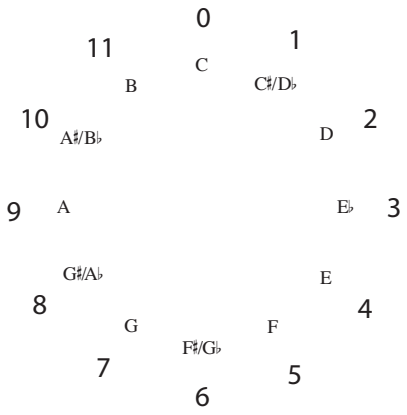


This is being reflected under T_8I

Let’s invert Bb C D Eb F under T8I.

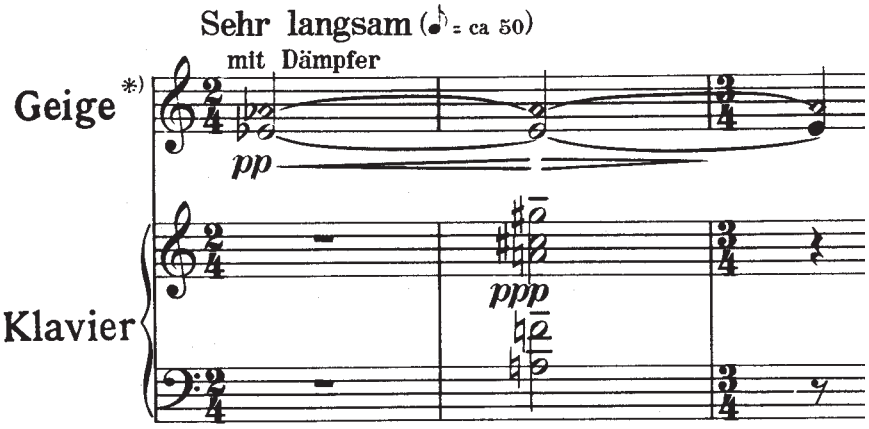
pre-inversion set	multiplied by -1	add 8	mod 12 result
5			
3			
2			
0			
10			

Let’s draw the tritone axis of symmetry and the mapping of notes on this clock.

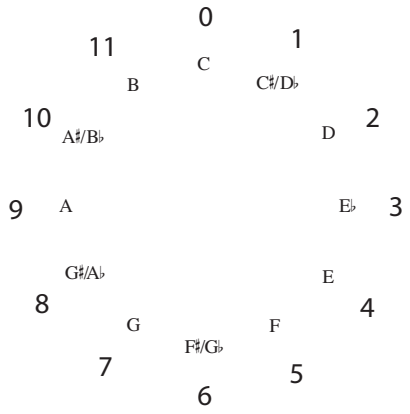


C. Set Types (aka Tn / TnI types)

Let's go back to that Webern chord.



Let's put it on the circle and look at it:

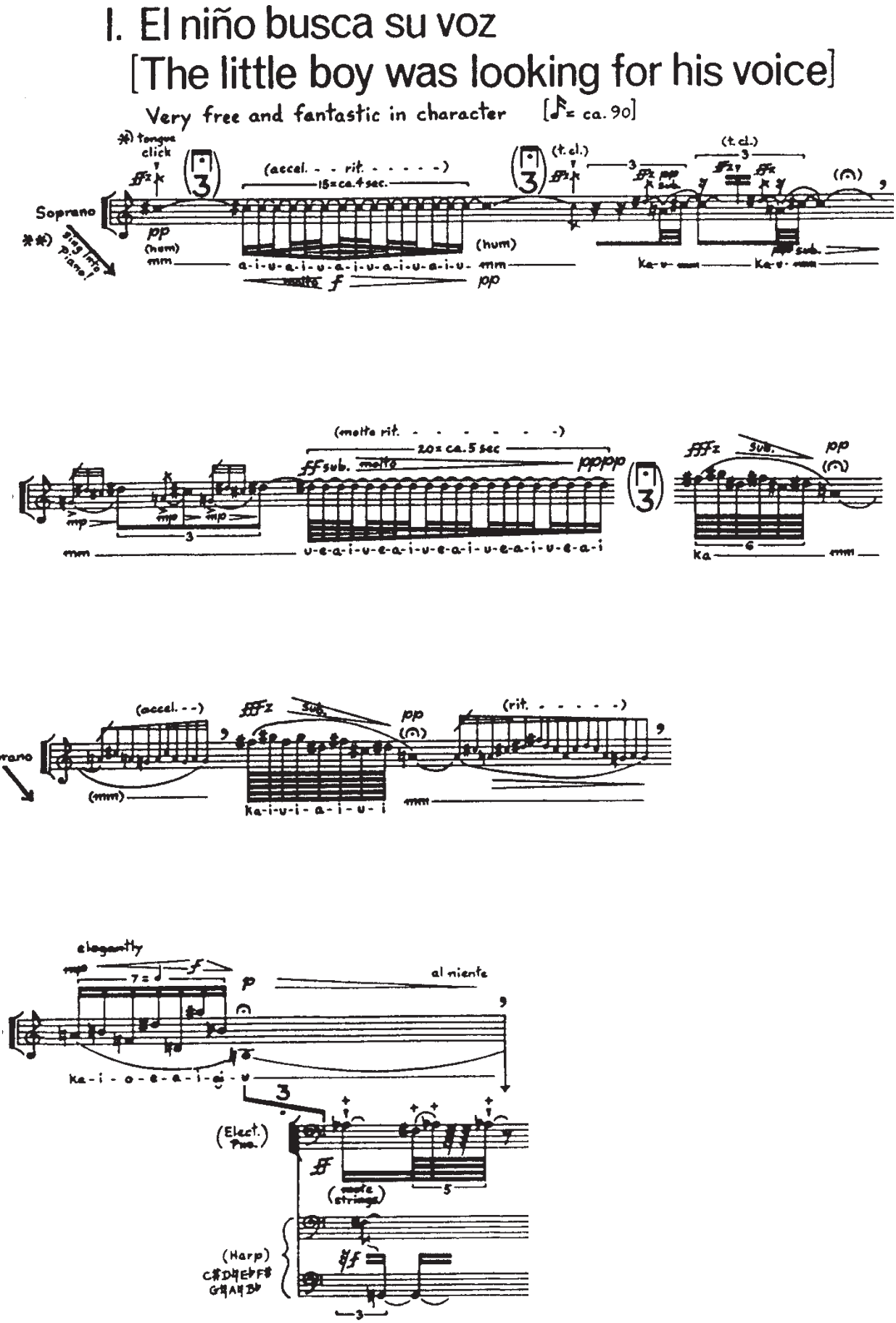


What's the *most compact* span on the circle that has all of our PCs in it?

Let's also mentally invert this set and "count it backwards."

Which one is *most-packed to the left*?

Transpose down to zero if you haven't already. That's the referential set type for this chord.

George Crumb., “Ancient Voices of Children”

Looking for three-note cells, mostly of set-type [0, 2, 6]