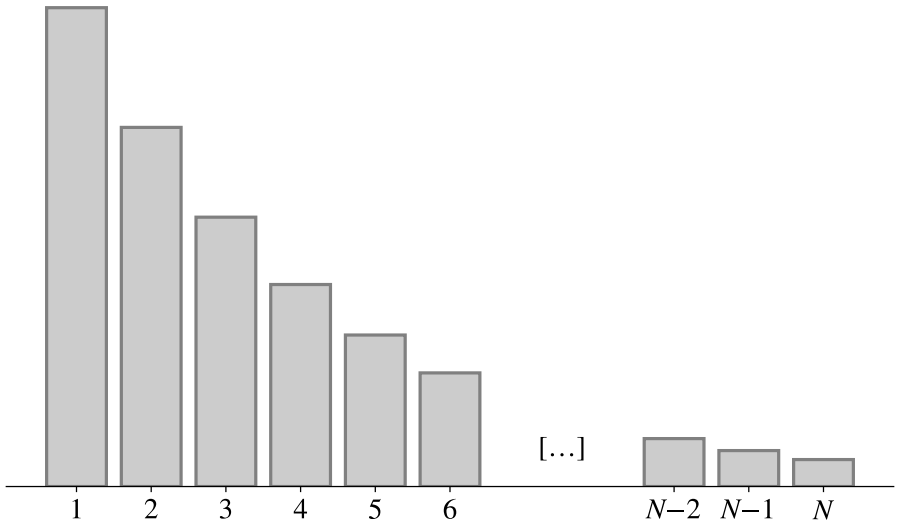
Gilberto Agostinho

Cartography #11

for solo piano

2018

All pieces in this series were composed using the following distribution:



$$P(n) = (3/4)^k \times P(n-k)$$

Cartography #11, for solo piano

Mapping and rules

pitches

set size	$N = 6$
transformation period	$1 \times$ bar (pre-loop)
transformation mechanism	$[a, b, c, d, e, f] \rightarrow [b, c, d, e, f, g]$, with $g \bmod 12 = (f \bmod 12) + 1$, and g at a uniformly randomly selected octave transposition within the instrument range defined as a constraint.
initial set	[C4, C♯4, D4, E♭4, E4, F4]

durations

set size	$N = 5$
transformation period	$2 \times$ bars (pre-loop)
transformation mechanism	$[a, b, c, d, e] \rightarrow [b, c, d, e, f]$, with $f = e - 1$.
initial set	$[12, 11, 10, 9, 8]$

articulations

possibilities	$\{\varnothing, >, ^{\wedge}\}$, where $\varnothing$ represents no articulation.
selection mechanism	the composition is made out of three voices, one for each type of articulation. These are then superimposed to create the final work.

looping mechanism

window size	$16 \times$ 𝅘𝅥𝅯 (post-loop)
shift size	semiquaver
mechanism	the algorithm first creates a non-looped version of the music using the maps and transformation mechanisms to select pitches, durations and dynamics as described above. After this music is generated, the next stage is to use a 16 semiquavers-long window which is shifted to the right by a single semiquaver after every cycle. The processes ends when the last note of the pre-looped music leaves the looping window.

constraints

- number of bars (pre-loop): 8.
- range: C3–C7.
- dynamic: ***pp***

General performance notes

- the piano's sustain pedal should be held half down throughout the piece. Some instruments and acoustic spaces might call for full pedalling, at the discretion of the performer.
- after the last note of the piece, let the resonance disappear before raising the sustain pedal.
- this piece has a single dynamic mark of ***pp***. Variations in loudness are notated using solely marcato and martellato signs ($>$ and $\wedge$, respectively). Notes without articulations marks should be played as softly as possible (equivalent to ***pp***), notes with a marcato sign should have a slightly louder level of loudness (equivalent to ***mp***) and notes with a martellato sign should have a higher level of loudness (equivalent to ***f***).

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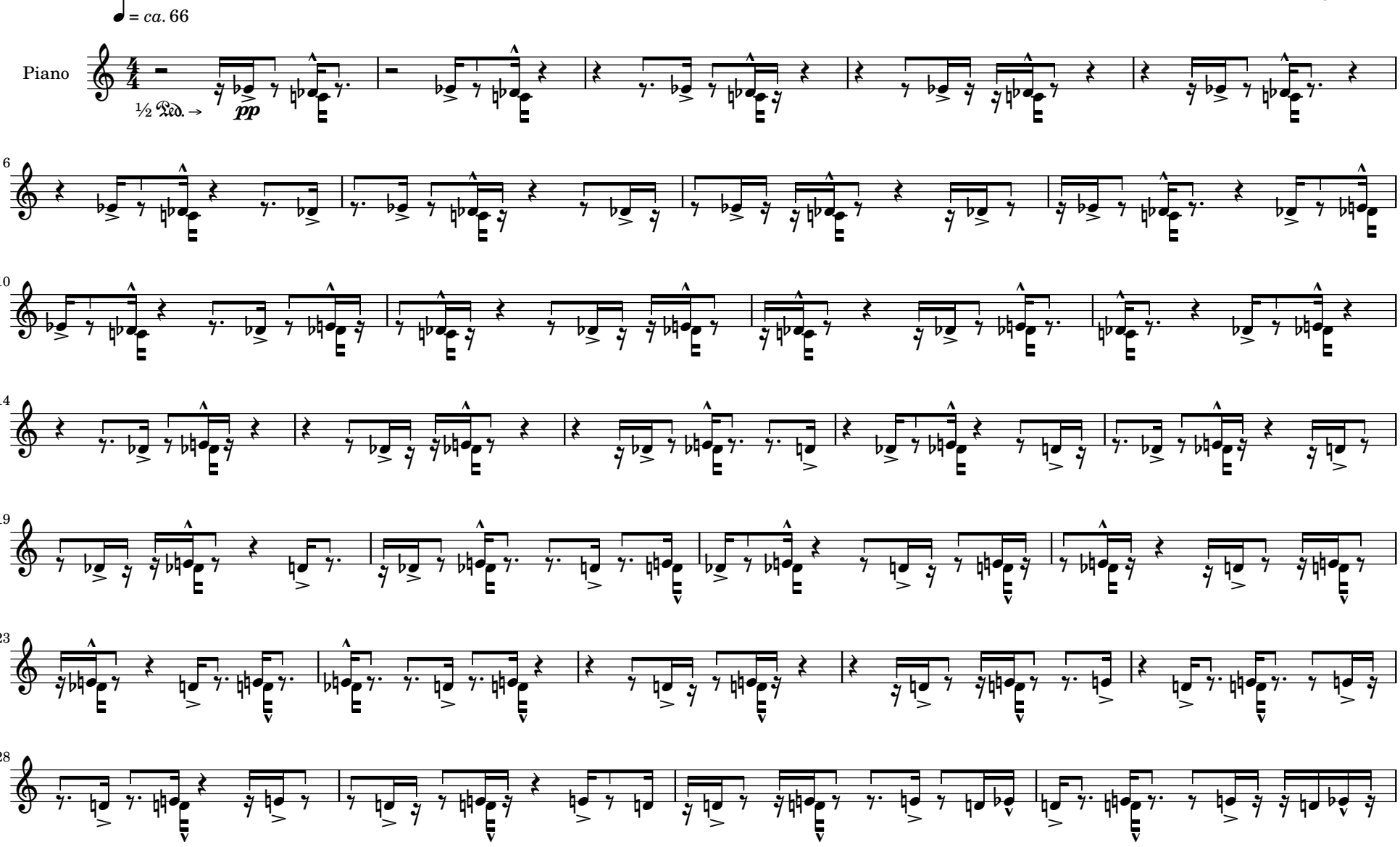

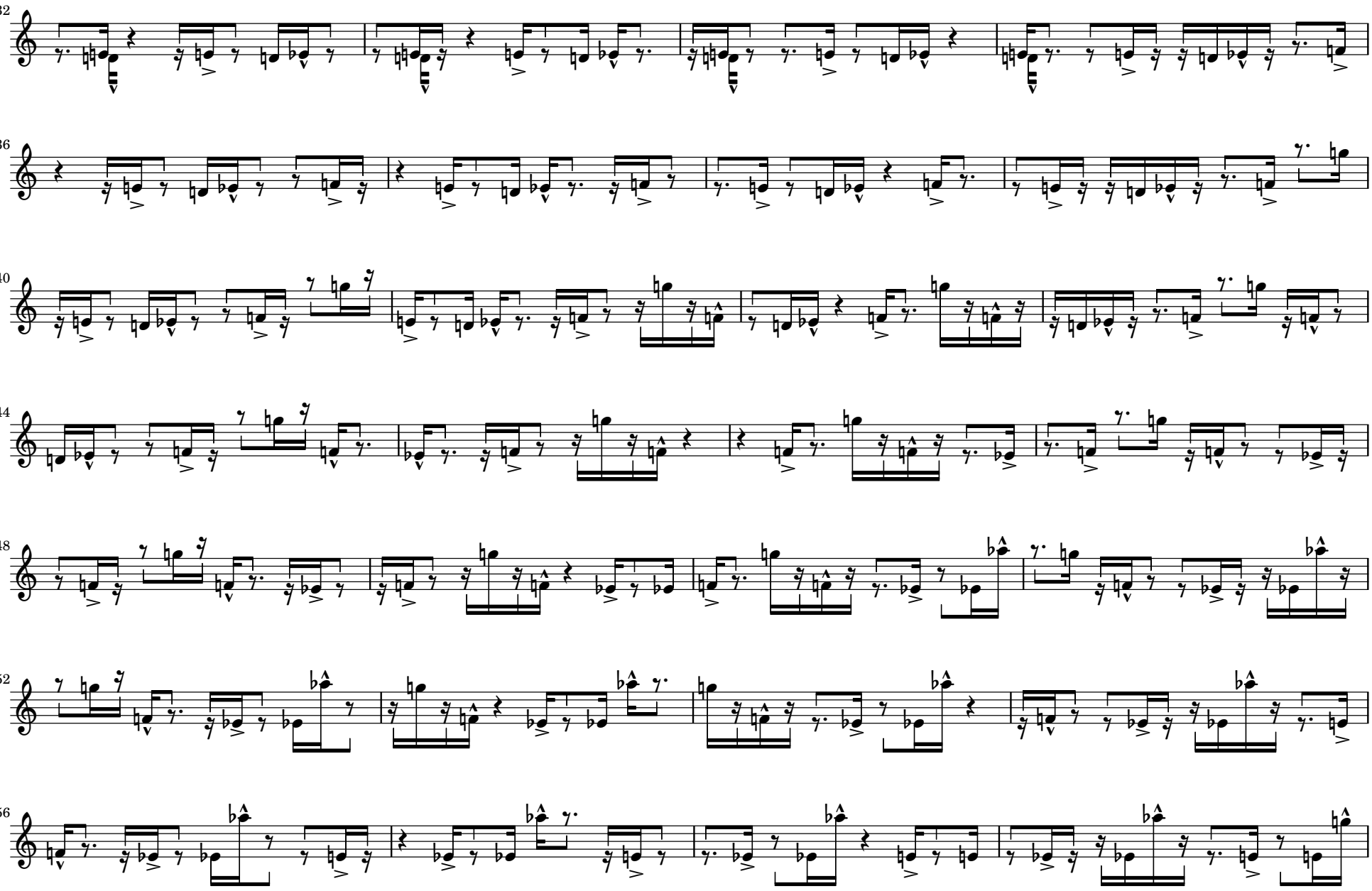
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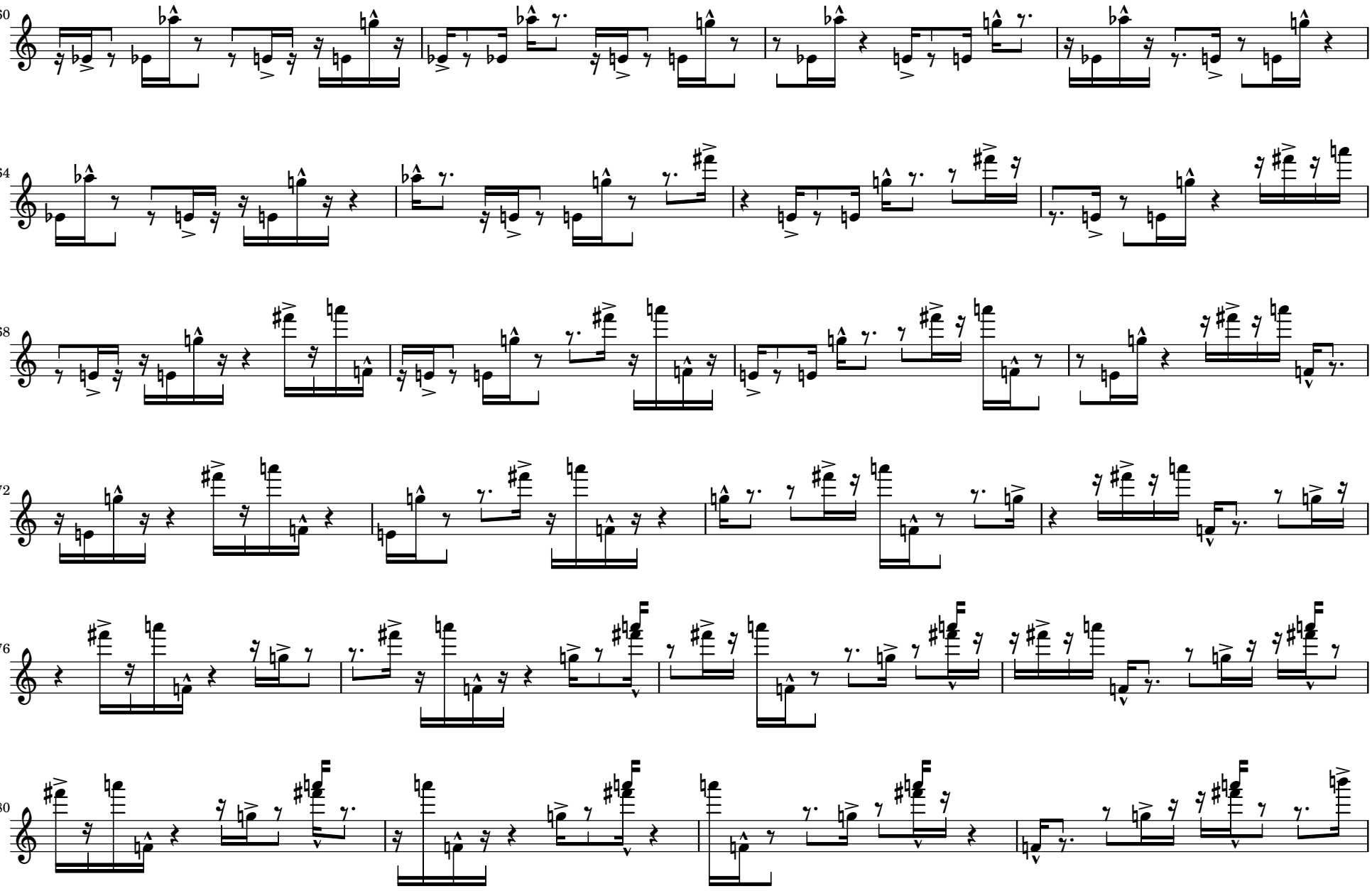
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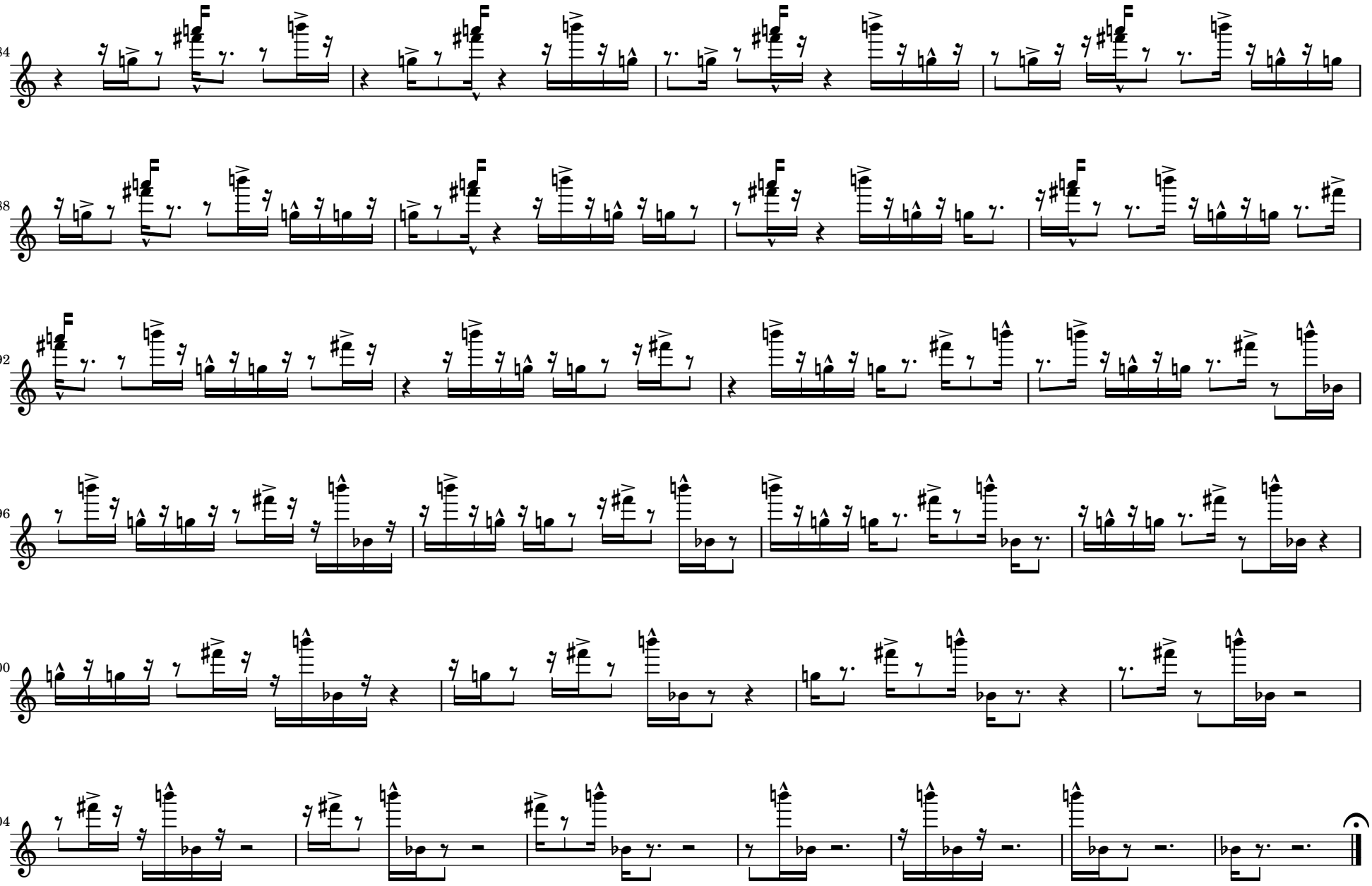
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