**Gilberto Agostinho**

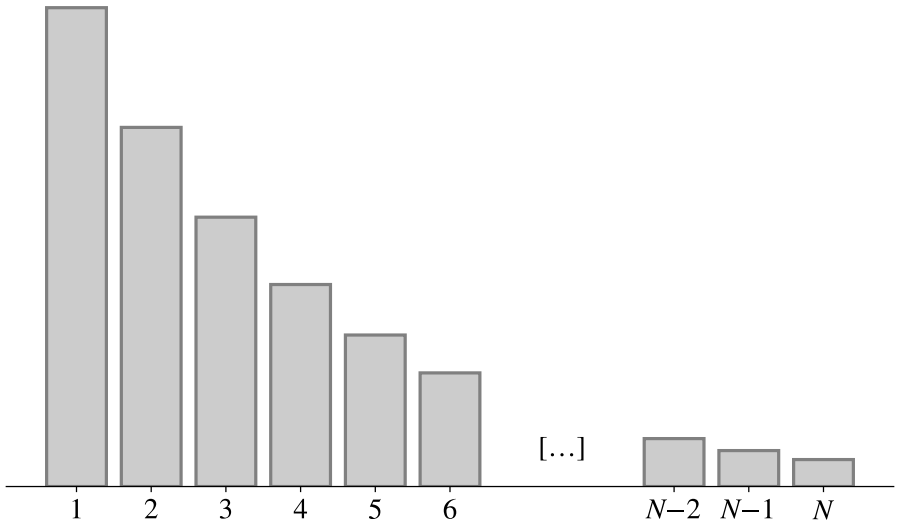
# Cartography #5

for violin and piano

**2017**

Full Score

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




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

# *Cartography #5*, for violin and piano

## Mapping and rules

### pitches

| | |
|---|---|
| set size | $N = 7$ |
| transformation period | $16 \times$ ♪ |
| transformation mechanism | $[G3, a, b, c, d, e, f] \rightarrow [G3, b, c, d, e, f, g]$, with uniformly randomly selected $g$ from the piano range such that $g \bmod 12 \neq x \bmod 12$, $\forall x \in [G3, a, b, c, d, e, f]$. The first element is fixed throughout the piece as the pitch G3. Also, the algorithm always ensures that there are at least three available notes in the violin range (G3 to A6). Finally, when selecting a pitch from the current set for the violin, the algorithm ensures that there are no skips larger than a major ninth (except for open strings). |
| initial set | [G3, A♭3, A3, B♭3, B3, C4, C♯4] |

### articulations

| | |
|---|---|
| set size | $N = 7$ |
| transformation period | no transformation. |
| set | [∅, ∅, ∅, ∅, >, >, ^], where ∅ represents no articulation. |
| selection mechanism | accents are tied to pitches, so when a random index has been generated to select a pitch, this same index also selects an accent. |

### durations (violin)

| | |
|---|---|
| set size | $N = 5$ |
| transformation period | $128 \times$ ♪ (32 bars) |
| transformation mechanism | $[a, a-1, a-2, \ldots, a-4] \rightarrow [a-1, a-2, a-3, \ldots, a-5]$, where an element equals to 1 if $a - k < 1$. |
| initial set | $[5, 4, 3, 2, 1]$ |

### durations (piano)

| | |
|---|---|
| set size | $N = 5$ |
| transformation period | $128 \times$ ♪ (32 bars) |
| transformation mechanism | $[a, a-1, a-2, \ldots, a-4] \rightarrow [a+1, a, a-1, \ldots, a-3]$, where an element equals to 1 if $a - k < 1$. |
| initial set | $[1, 1, 1, 1, 1]$ |

### constraints

- number of pitch transformations: 40.
- number of duration transformations: 5.
- the piece begins with the violin and the piano playing at the same time.
- there are no intervals larger than a major ninth in the violin part (except when one of the notes is in an open string).

## General performance notes

- this piece has no dynamic marks. Loudness is solely notated using marcato and martellato signs ( $>$ and $\hat{}$ , respectively). Notes without articulations marks should be played as softly as possible (equivalent to ***pp***), notes with a marcato sign should have a medium level of loudness (equivalent to ***mf***) and notes with a martellato sign should have a high level of loudness (equivalent to ***ff***).
- the piano's sustain pedal should be held halfway down throughout the piece. A good reference point for this is when individual note lengths cannot be precisely perceived (that is, the sound is not cut when releasing a key). Some instruments and acoustic spaces might call for slightly different pedalling (at the discretion of the performer).
- after the last note of the piece, let the resonance disappear before raising the sustain pedal.

This score was automatically generated by a computer program. The only manual alterations made to it are:

- manually added ottavation.
- manually added two fermatas piano's final bar line.

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# Cartography #5

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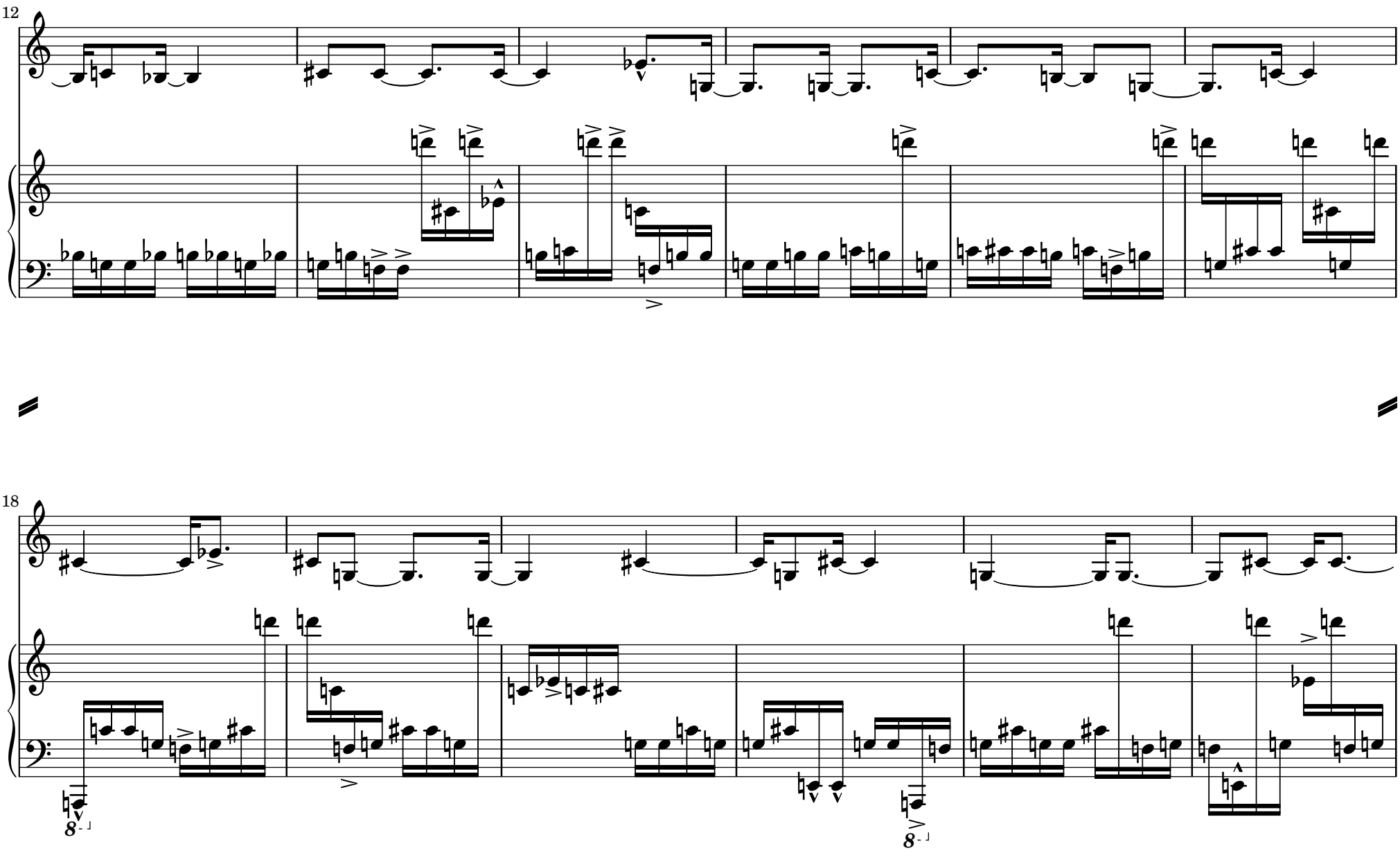
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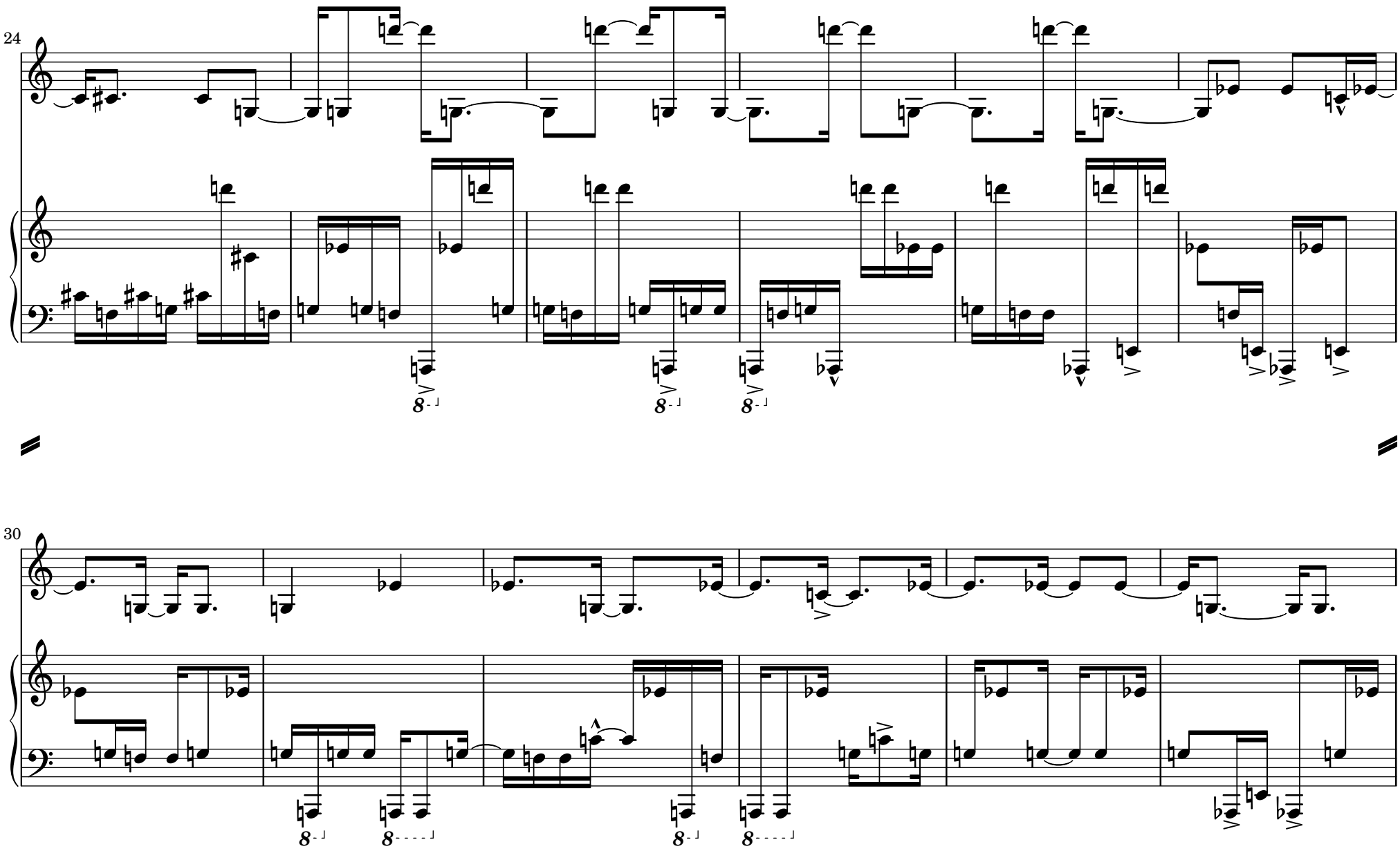
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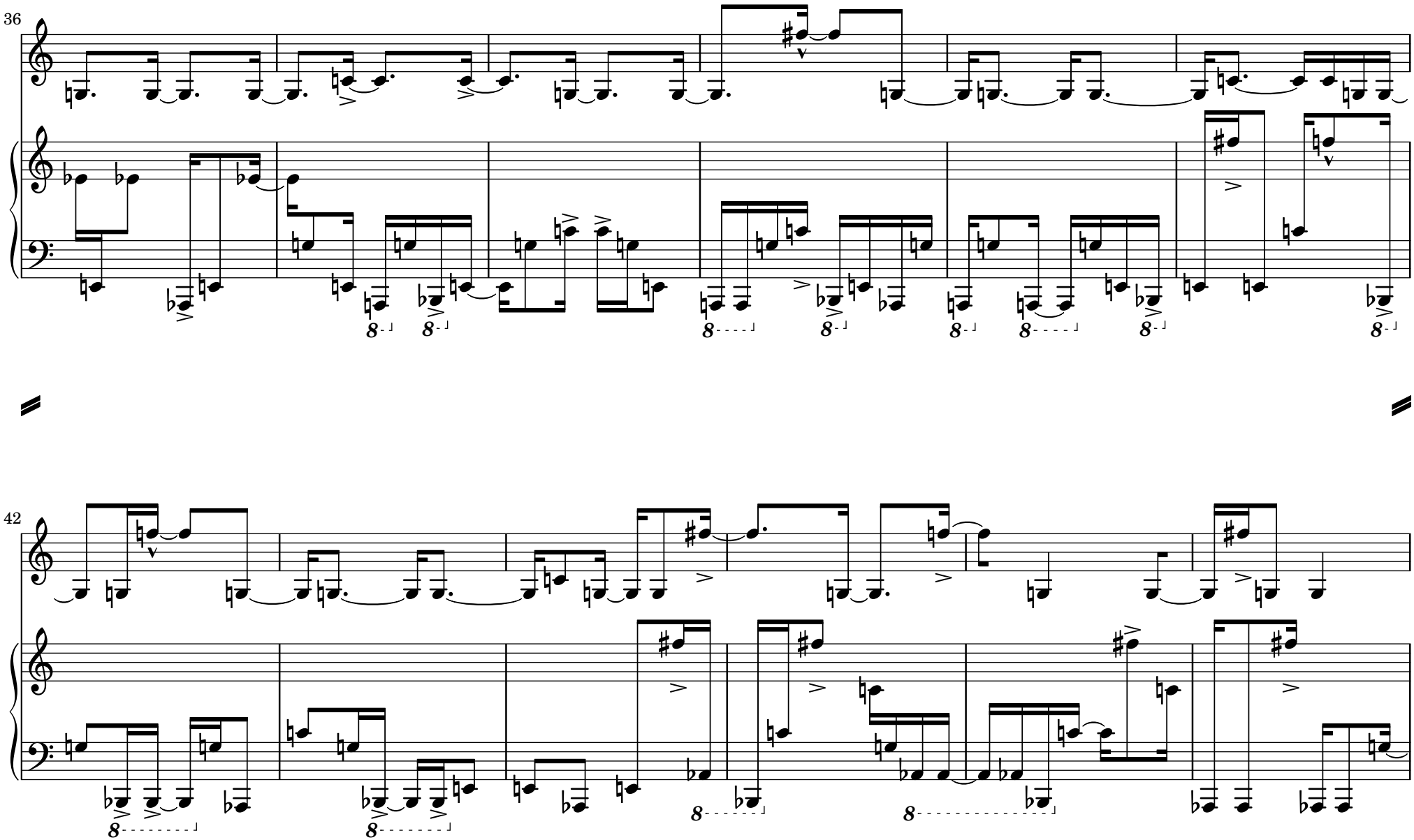
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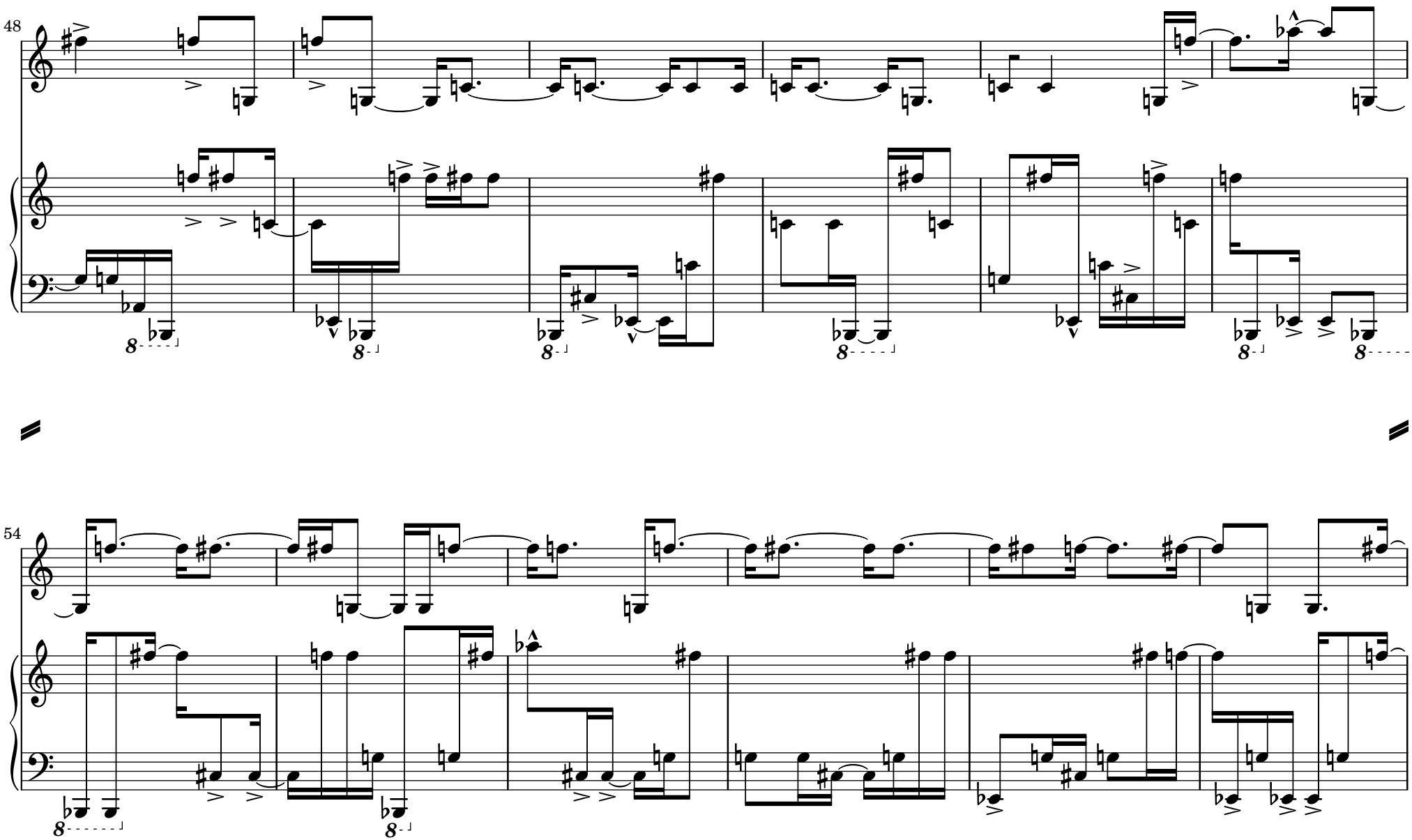
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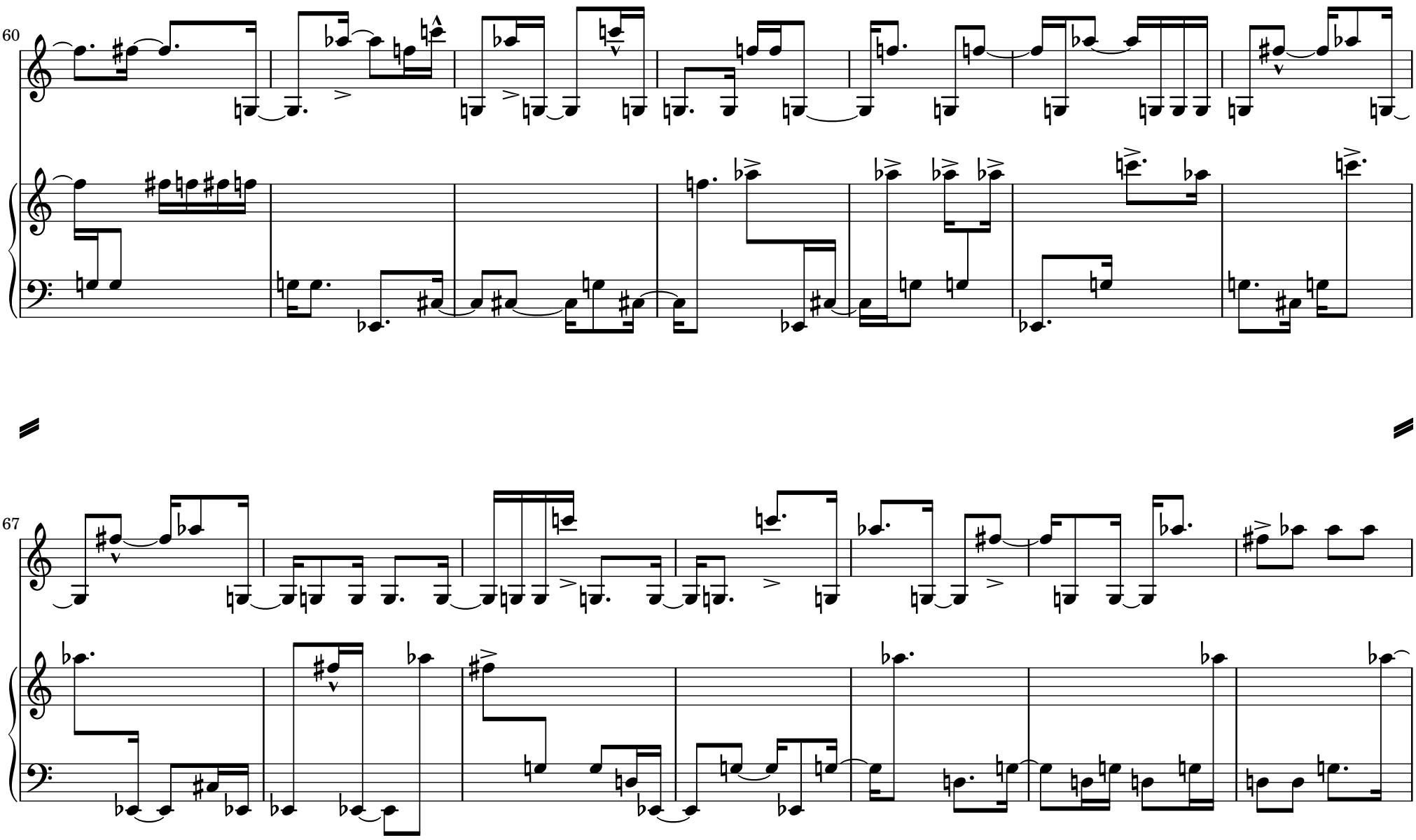
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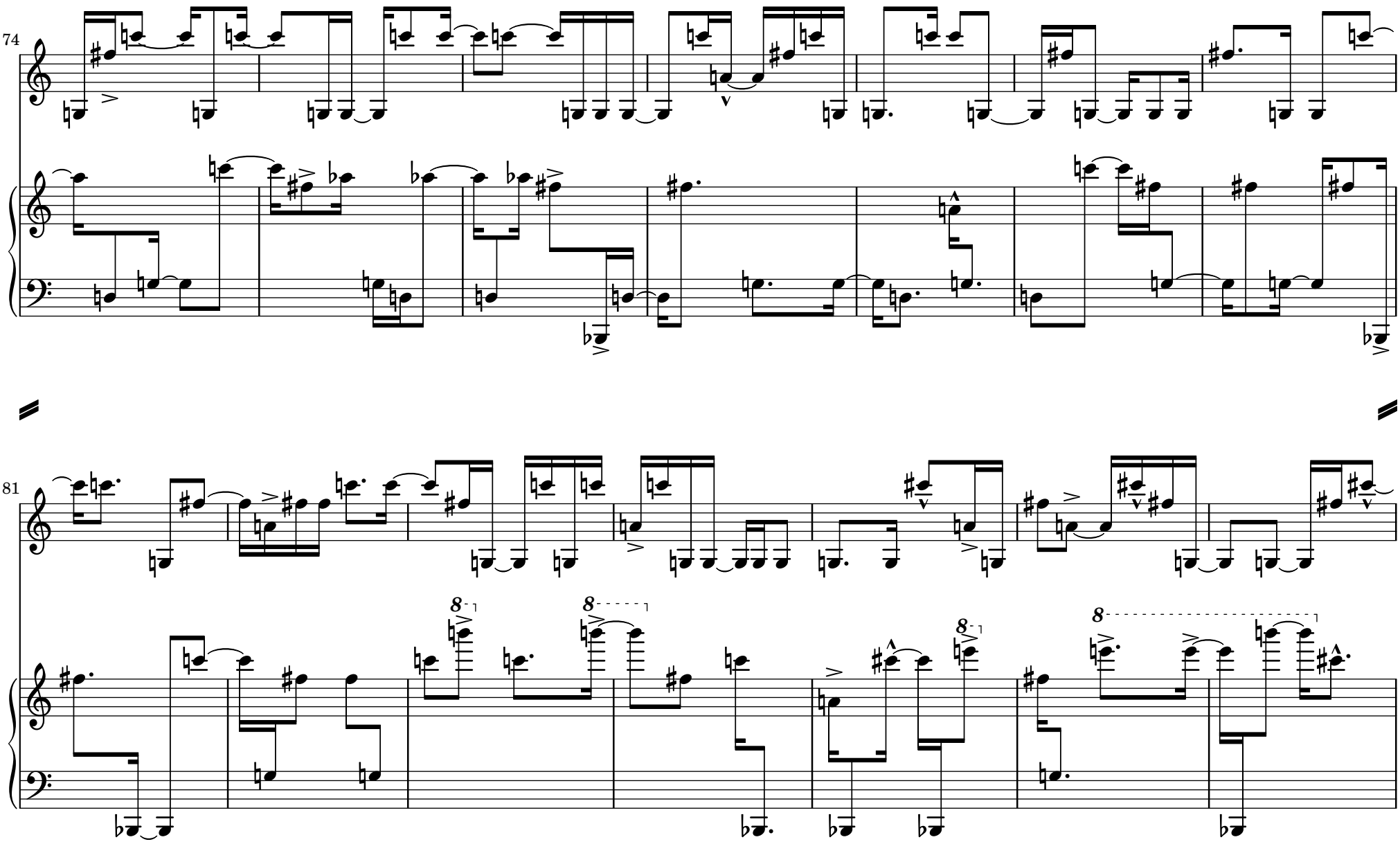
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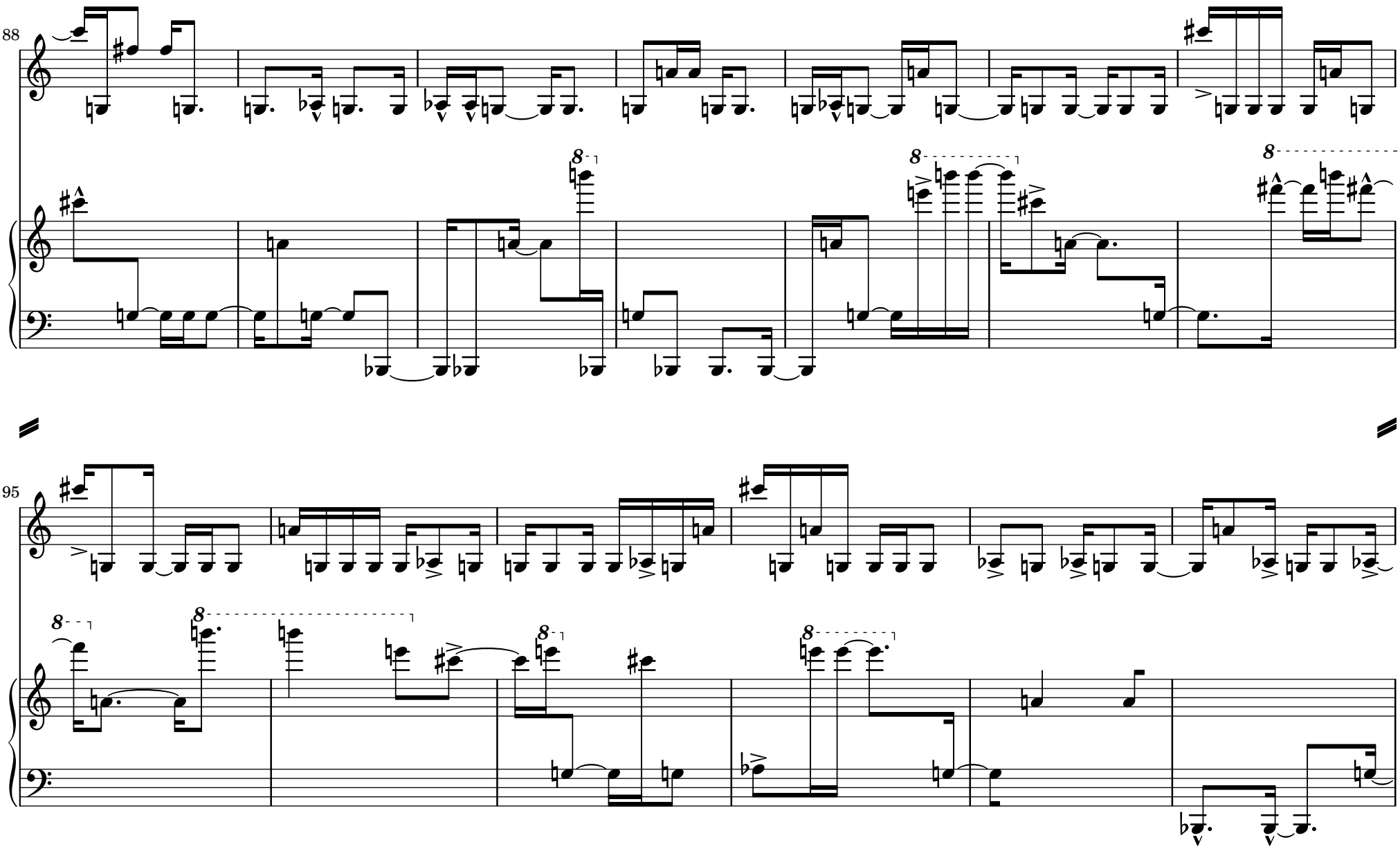
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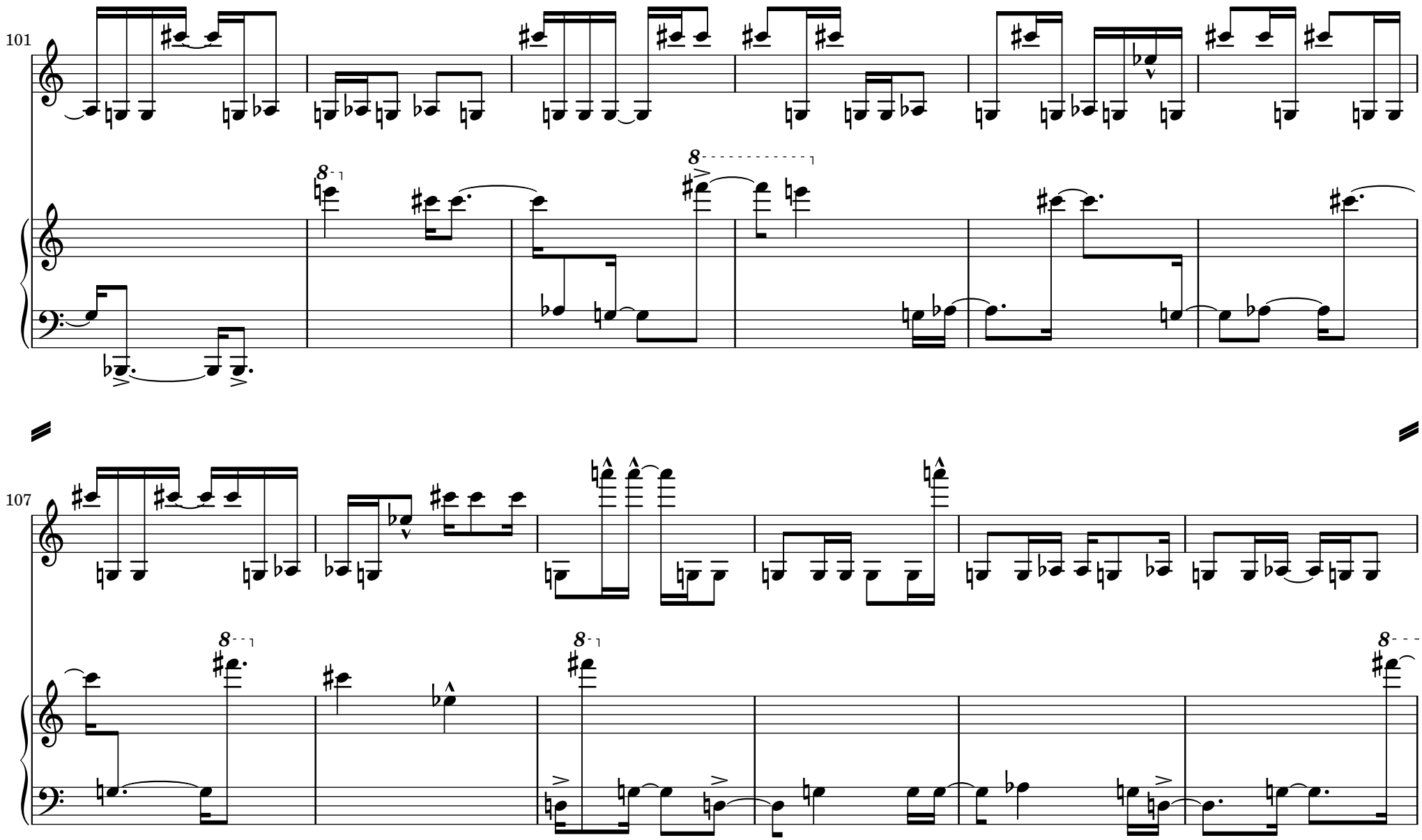
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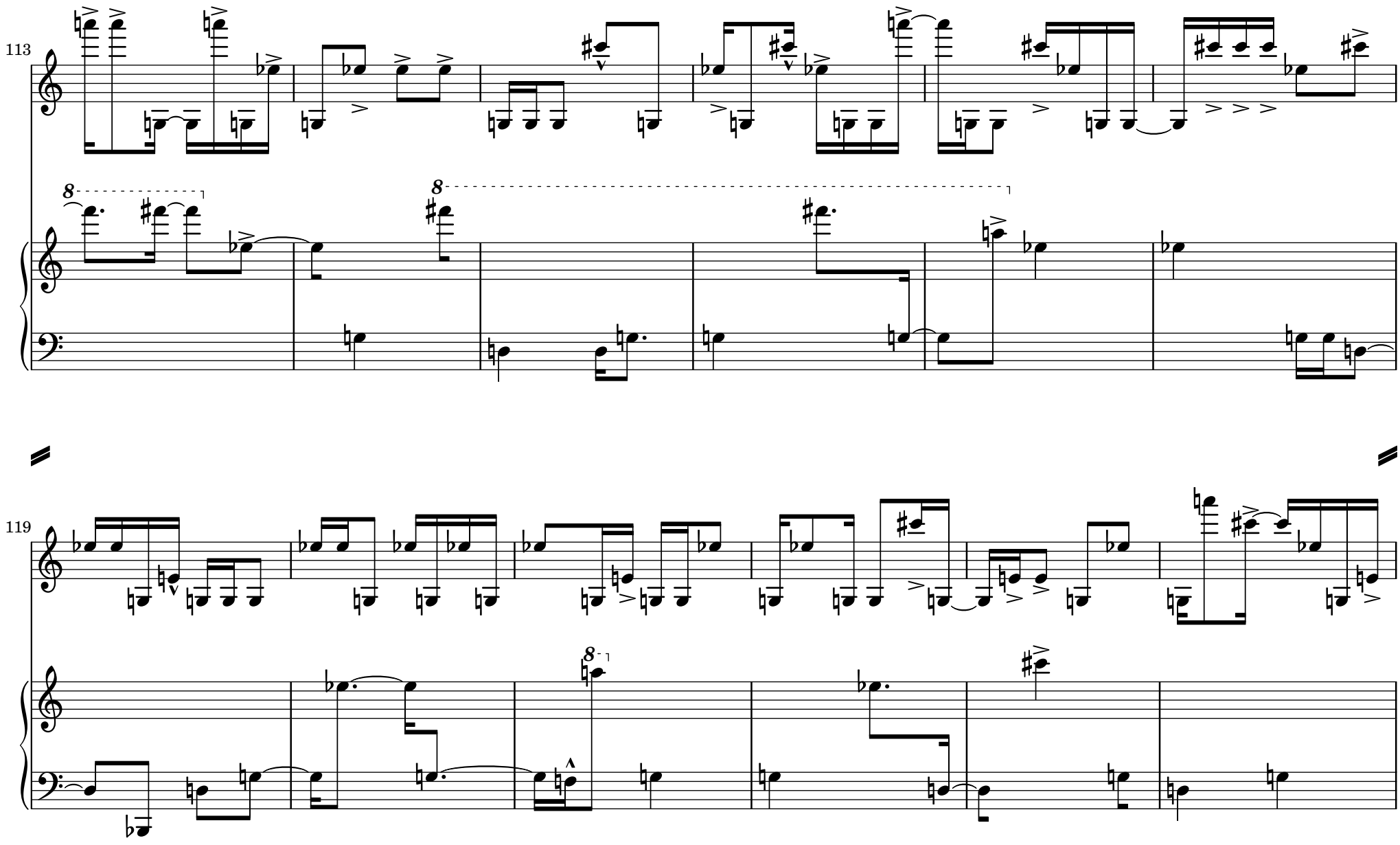
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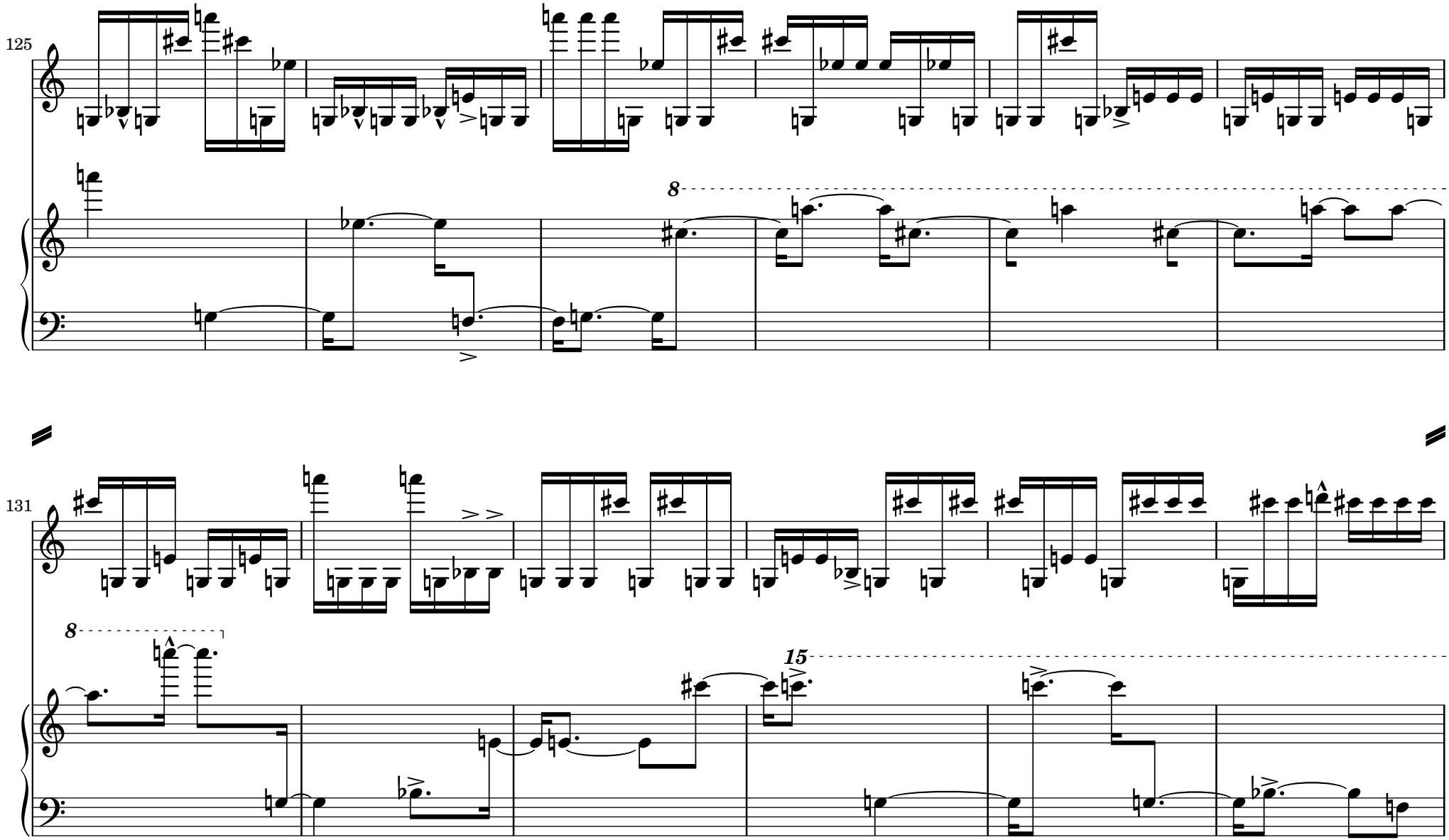
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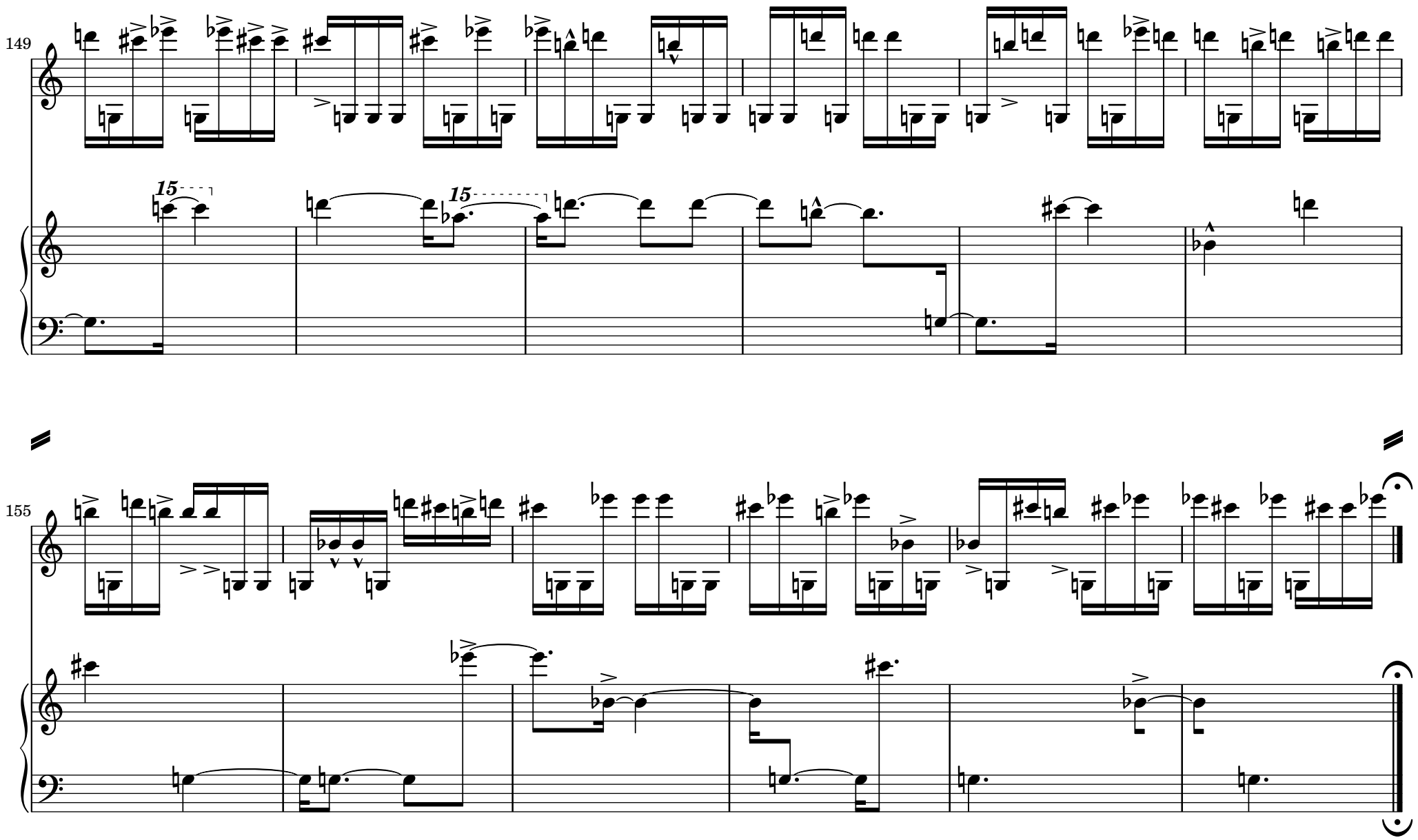
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