JOHN GRESCHAK

THE TOWER OF HANOI

for string orchestra

UNFINISHED

Note from the Composer

The Tower of Hanoi is a puzzle that consists of three pegs and a number of disks. Each disk has a different diameter. Initially, the disks are stacked on a single peg. Larger disks are placed under smaller disks. The object of the game is to move all disks from one peg to another. Only one disk may be moved at a time, and a disk may only be placed on top of another disk if the disk that is being moved has a smaller diameter. The puzzle was published by the French mathematician Edouard Lucas in 1883.

The following passage from *Mathematical Recreations and Essays* by W. W. Rouse Ball and H. S. M. Coxeter describes a legend that is associated with this puzzle:

De Parville gave an account of the origin of the toy which is a sufficiently pretty idea to deserve repetition. In the great temple at Benares, says he, beneath the dome which marks the centre of the world, rests a brass plate in which are fixed three diamond needles, each a cubit high and as thick as the body of a bee. On one of these needles, at the creation, God placed sixty-four discs of pure gold, the largest disc resting on the brass plate, and the others getting smaller and smaller up to the top one. This is the Tower of Bramah. Day and night unceasingly the priests transfer the discs from one diamond needle to another according to the fixed and immutable laws of Bramah, which require that the priest on duty must not move more than one disc at a time and that he must place this disc on a needle so that there is no smaller disc below it. When the sixty-four discs shall have been thus transferred from the needle on which at the creation God placed them to one of the other needles, tower, temple, and Brahmins alike will crumble into dust, and with a thunderclap the world will vanish.

This piece was created by using musical material derived from the mathematical properties of The Tower of Hanoi and its legend. It is based upon the case that consists of five disks.

For additional information, visit http://www.greschak.com on the World Wide Web.

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John Greschak
2001

Notation

All glissandos should be smooth slides that progress gradually from one pitch to another without articulating intermediate pitches. They should begin immediately after the initial pitch is sounded.

Accidentals affect only those notes which they immediately precede, with the exception of tied notes. Accidentals are never repeated on tied notes.

Articulation Symbols

> Normal Accent (louder than prevailing dynamic)

∧ ∨ Strong Accent (louder than normal accent)

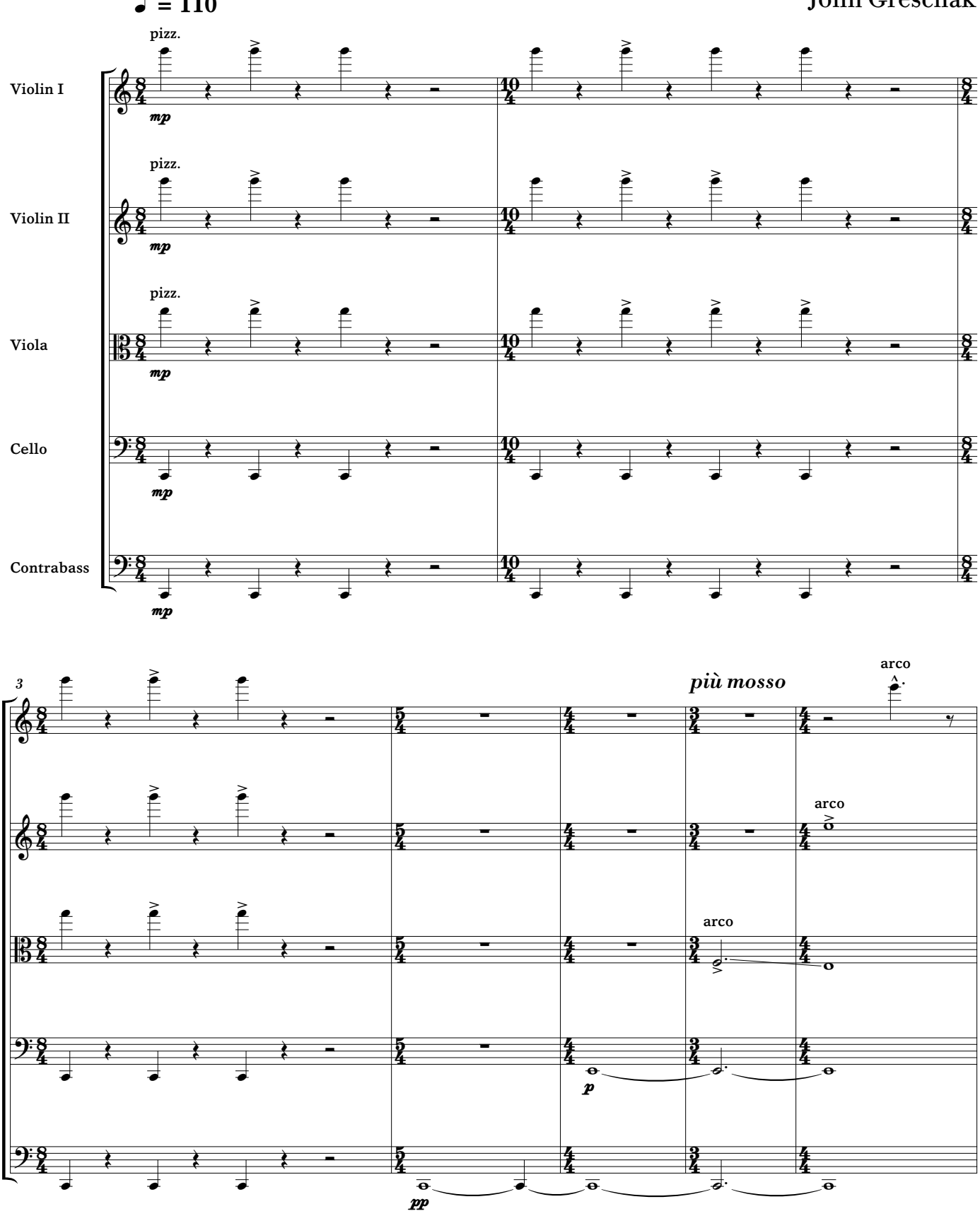
· Staccato (shorter than normal)

Duration

4 minutes

THE TOWER OF HANOI

John Greschak



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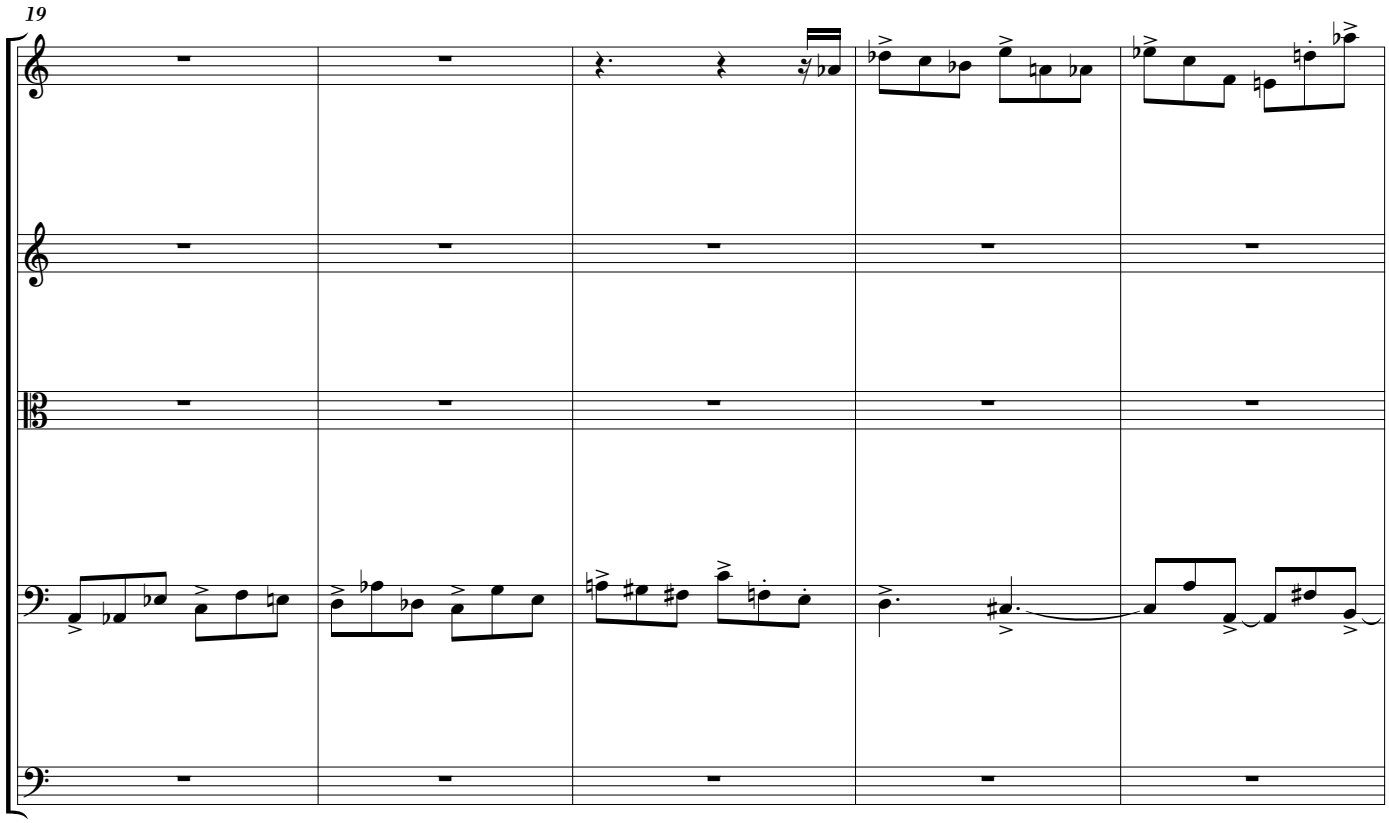
a tempo

8

mp

14

mp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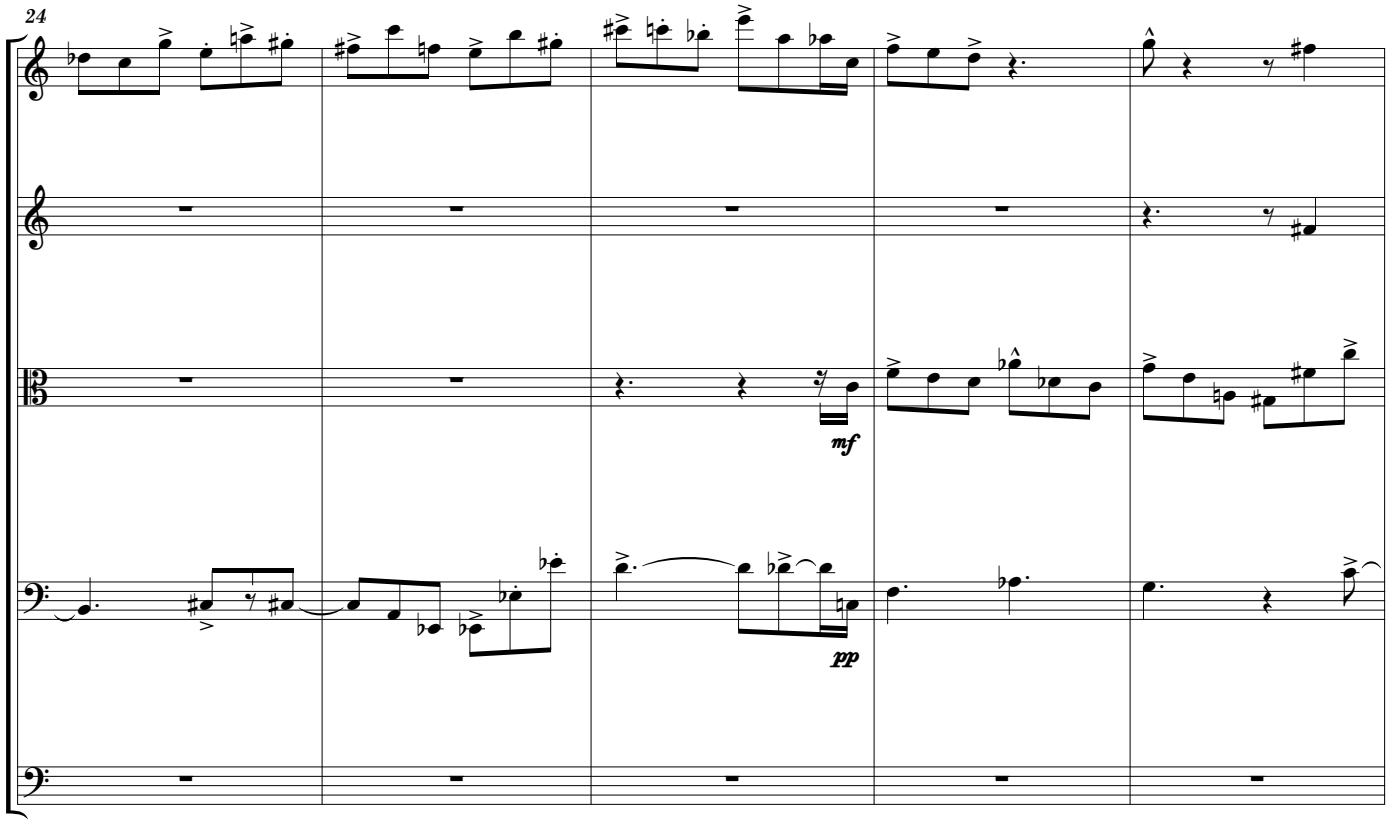
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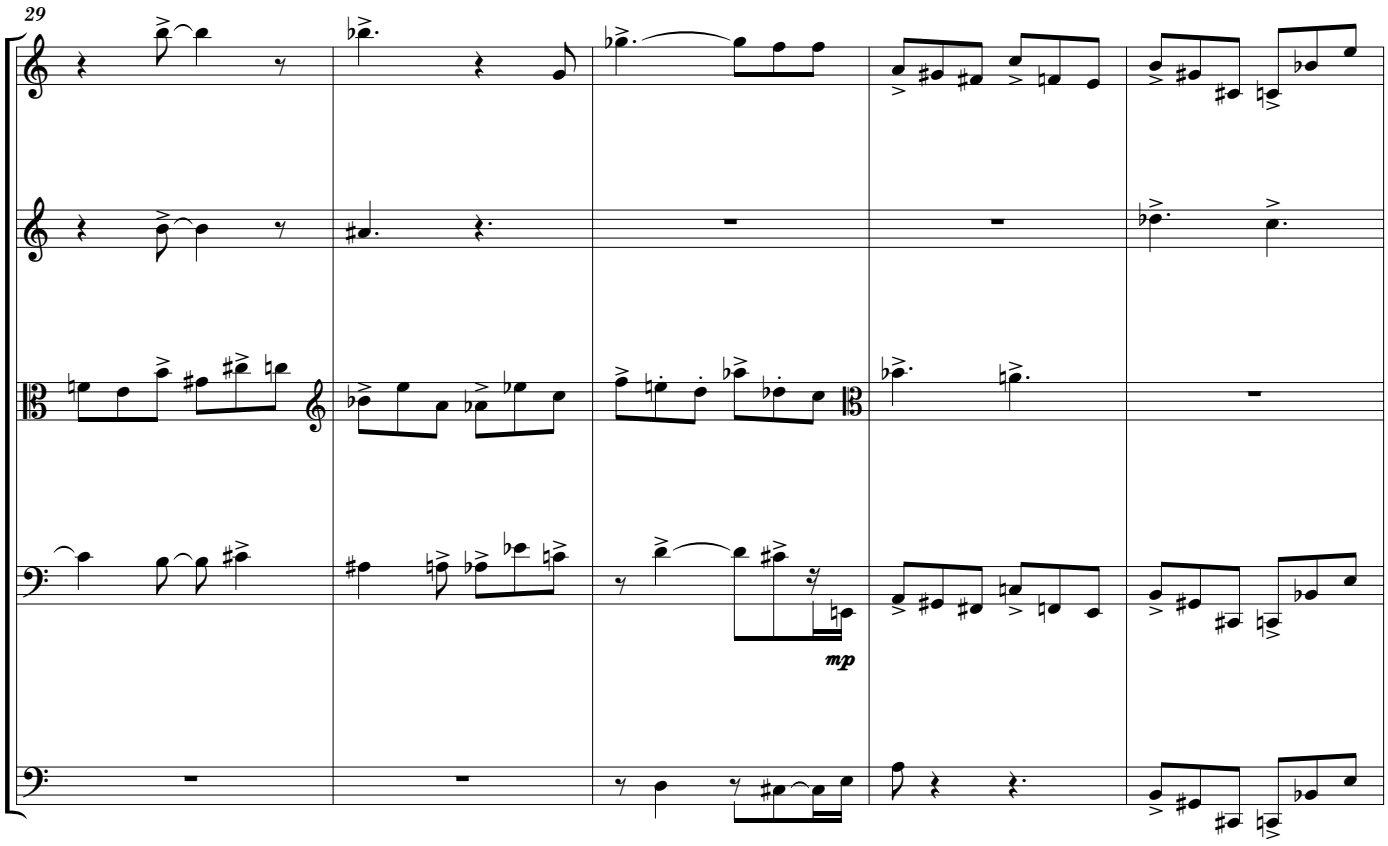
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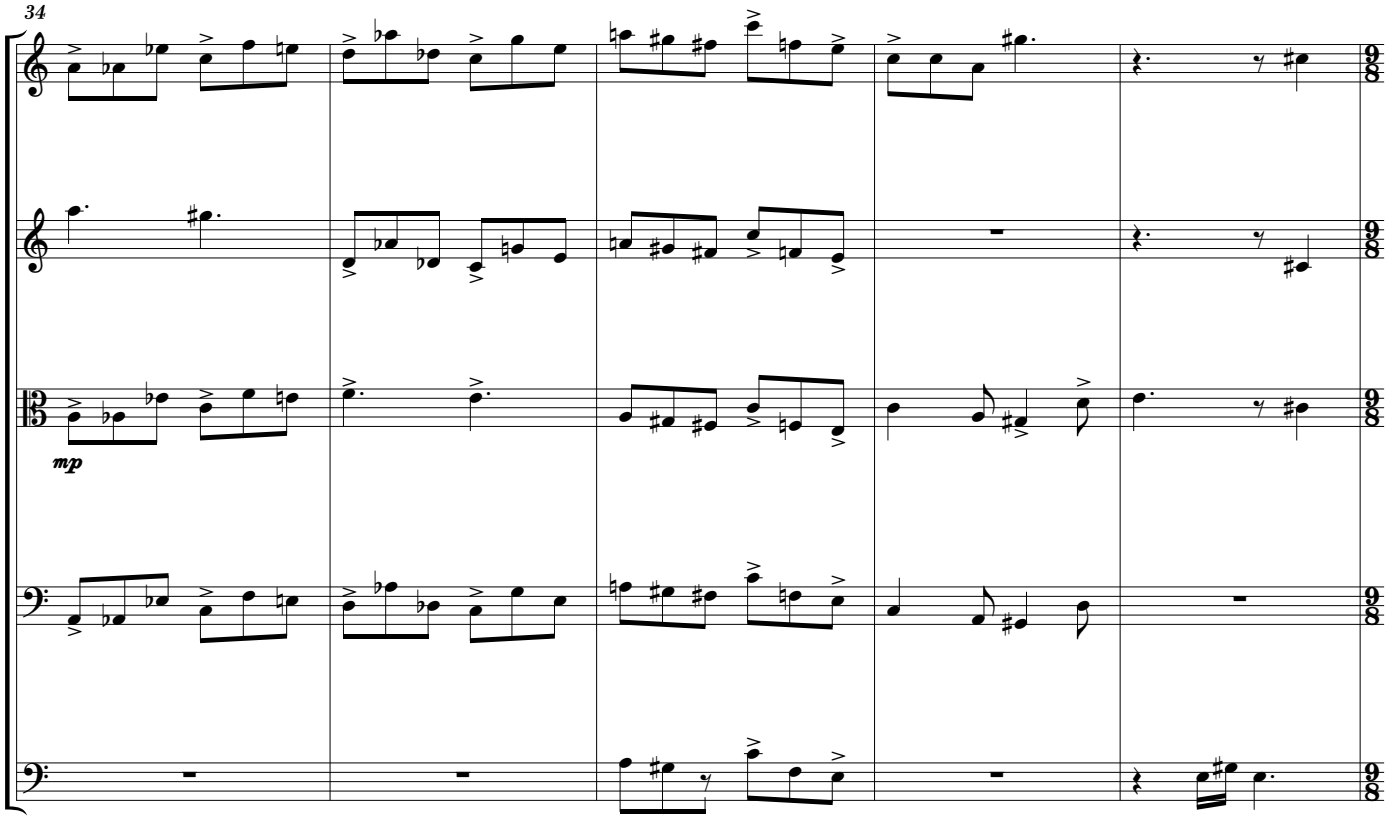
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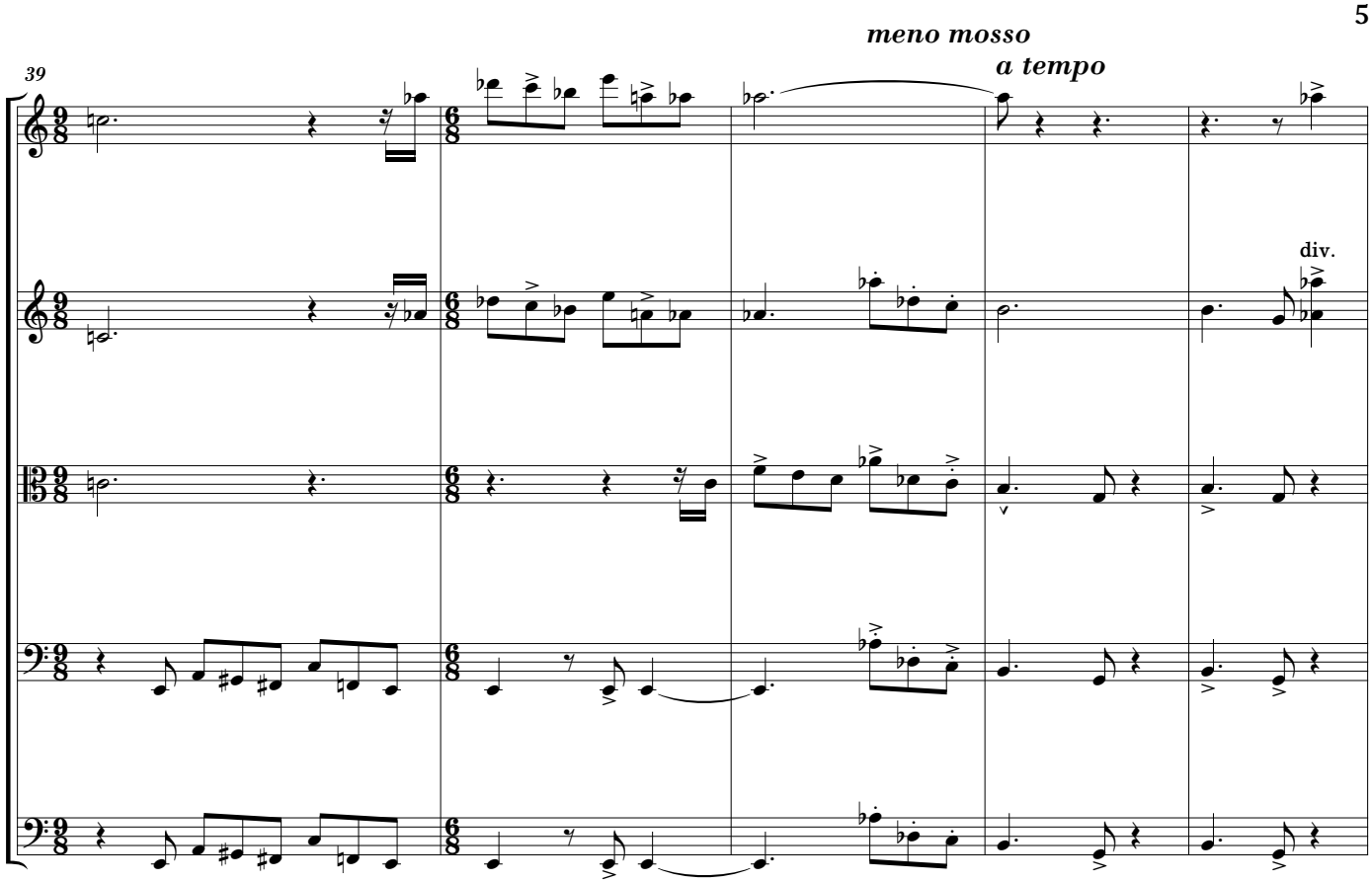
9/8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meno mosso
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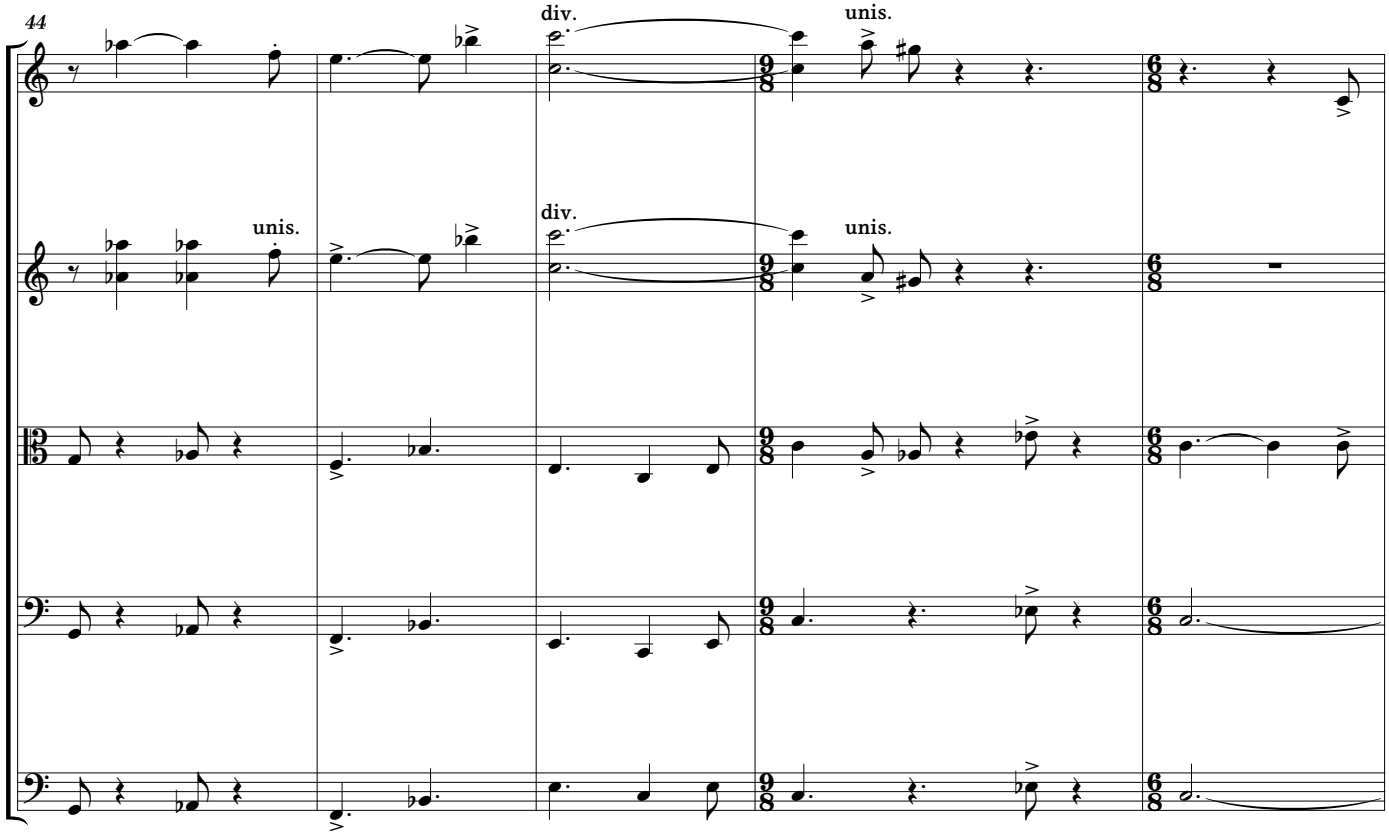
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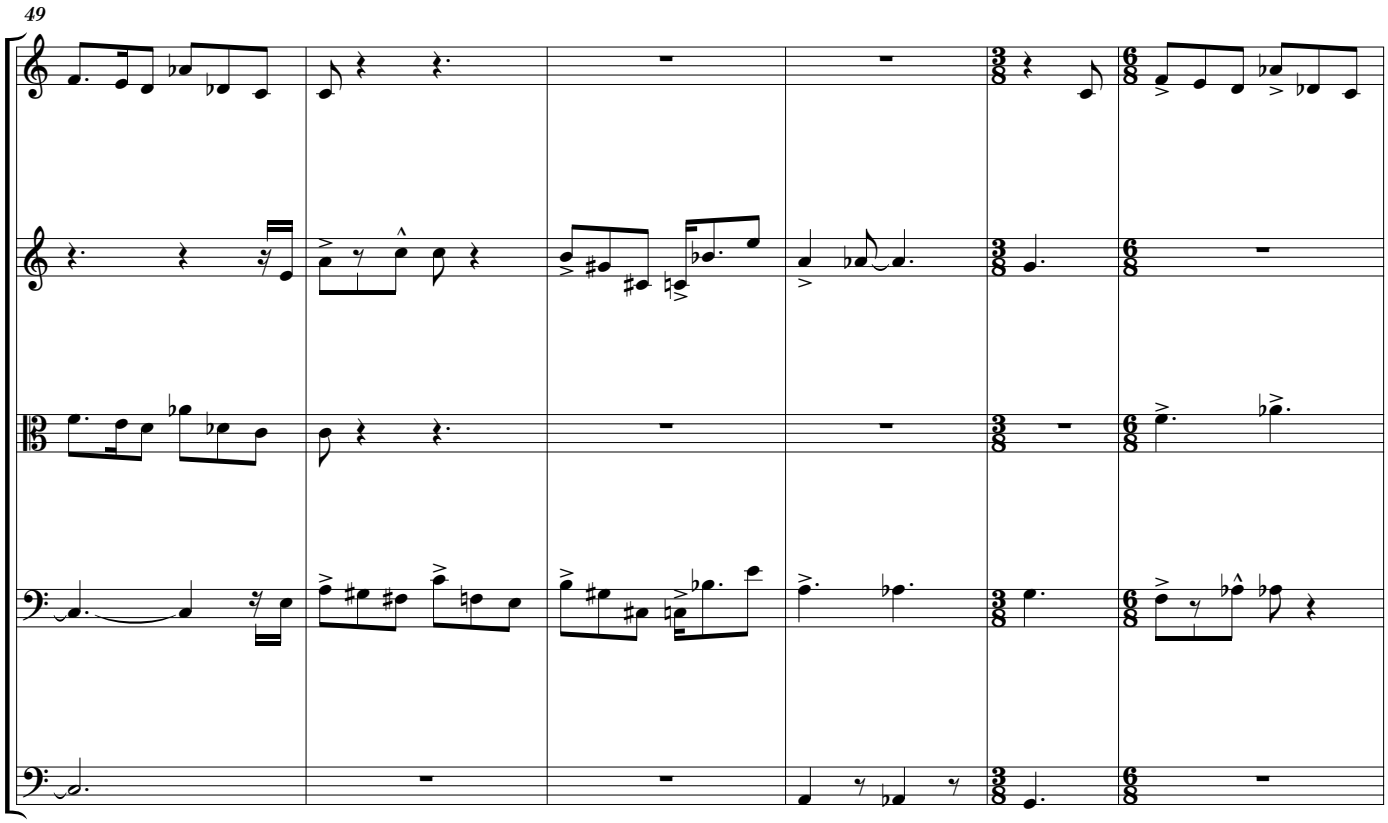
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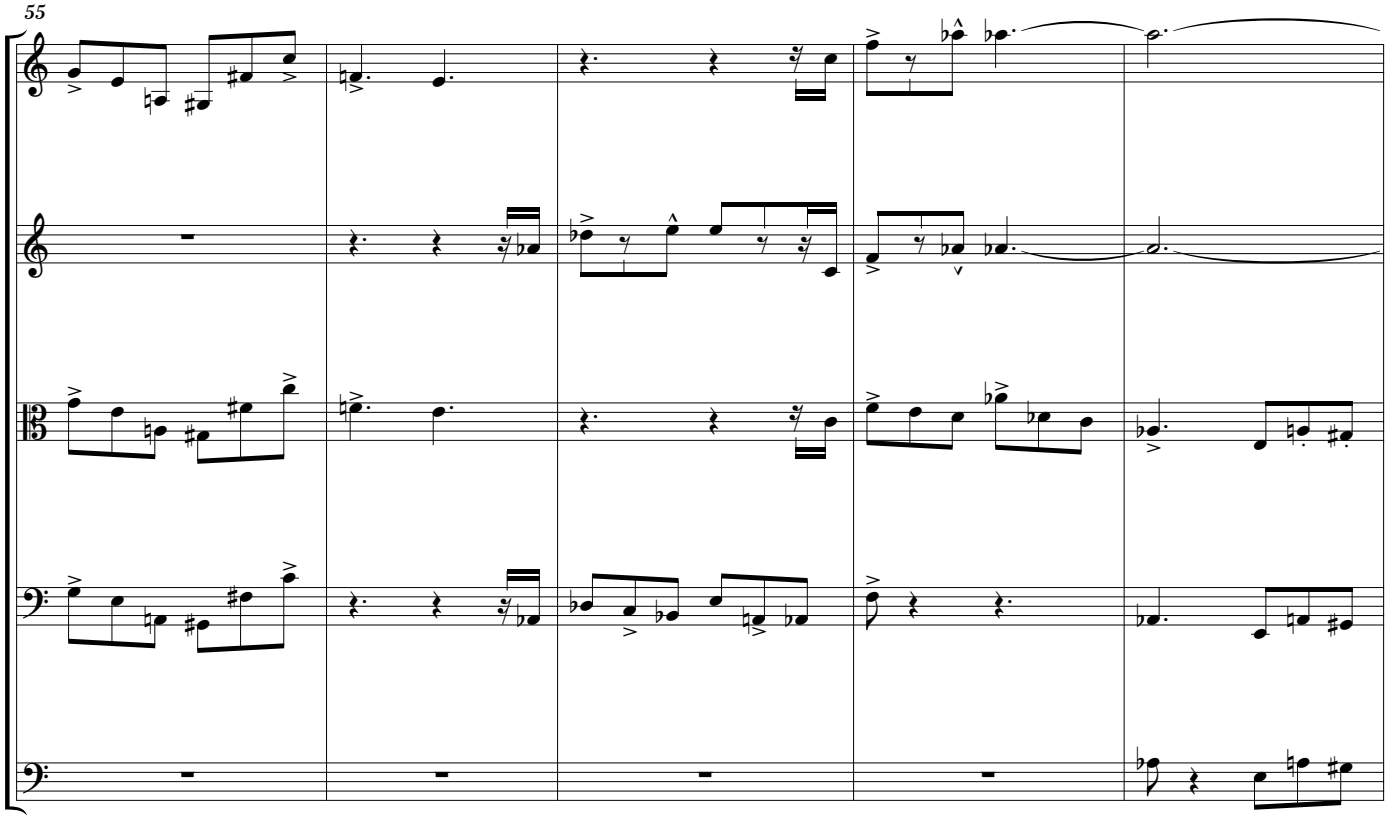
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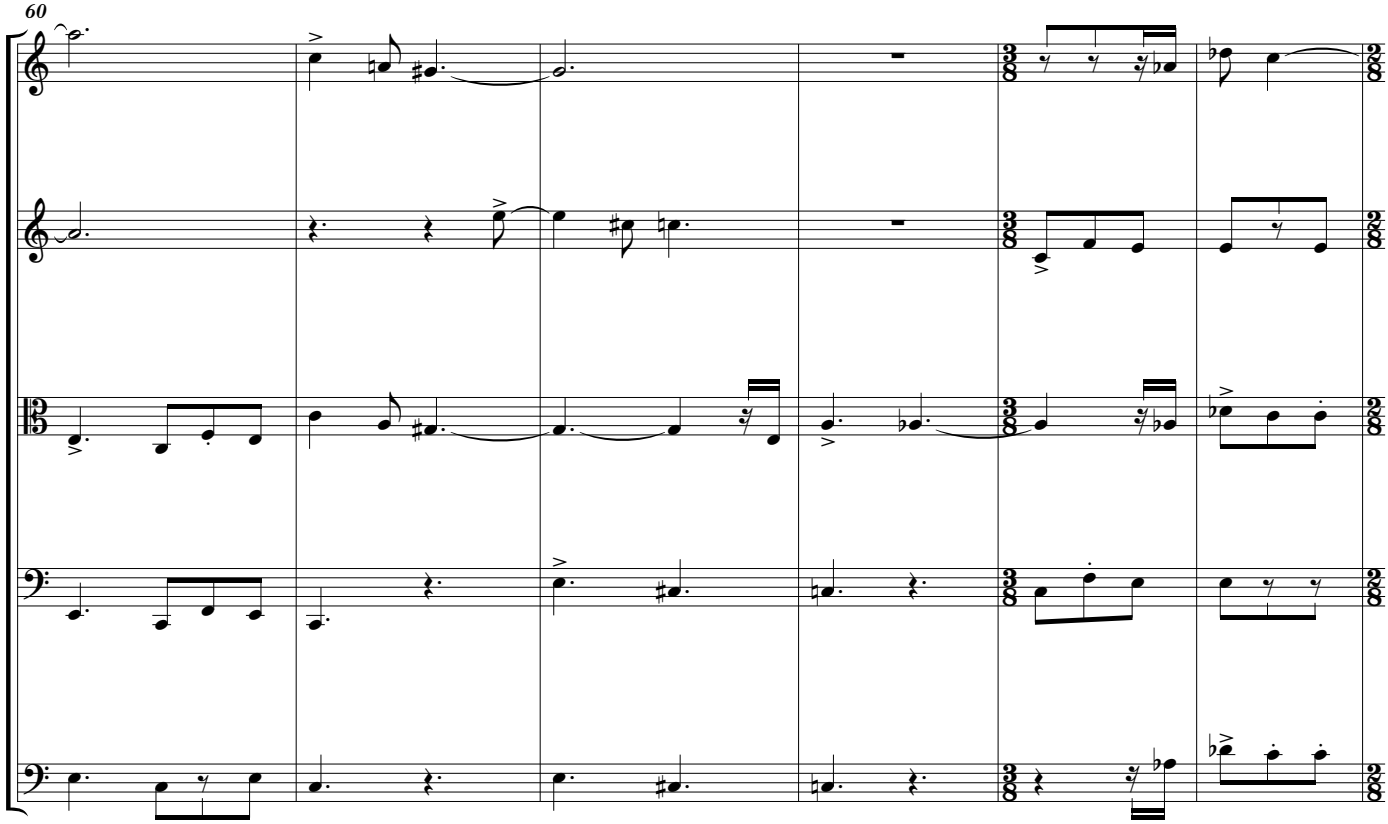
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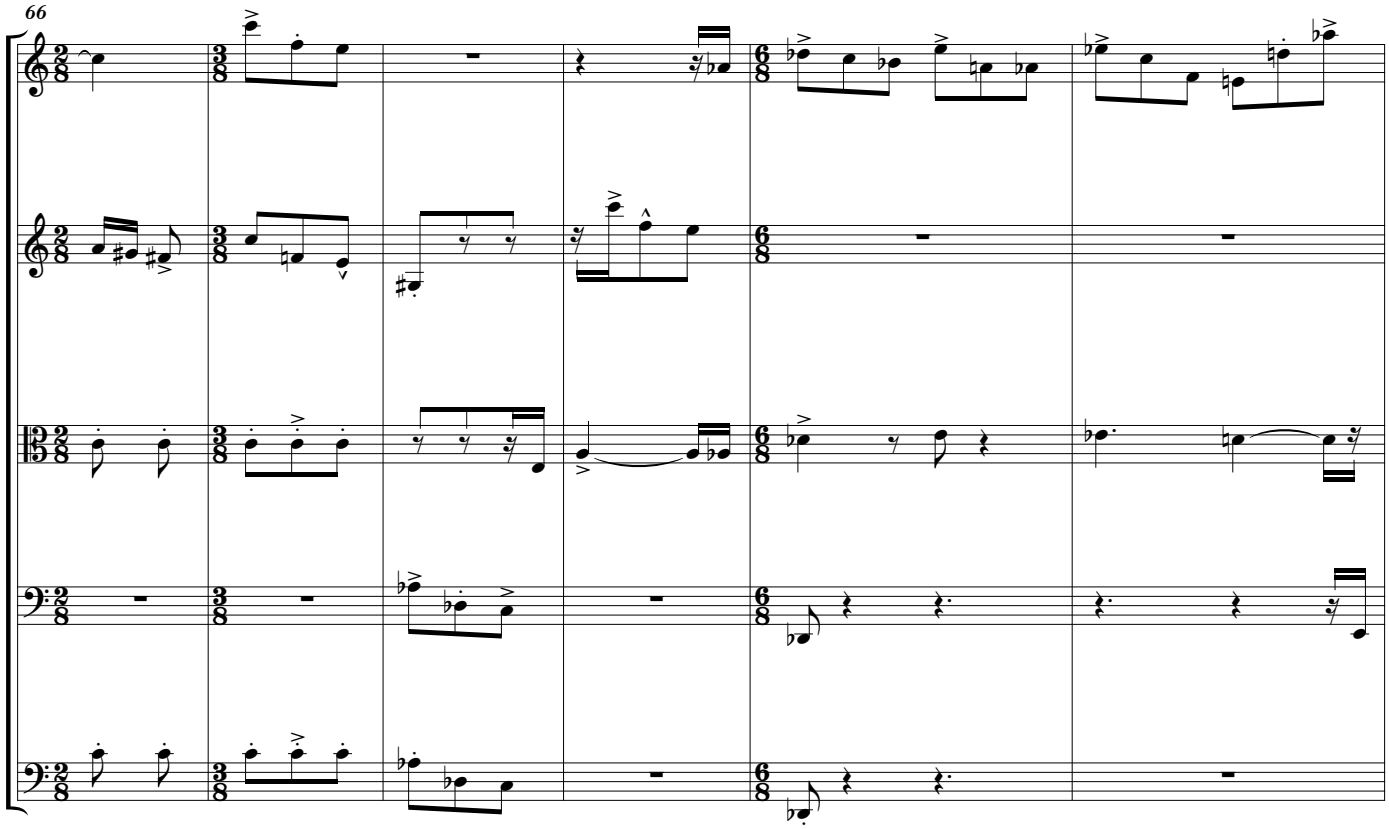
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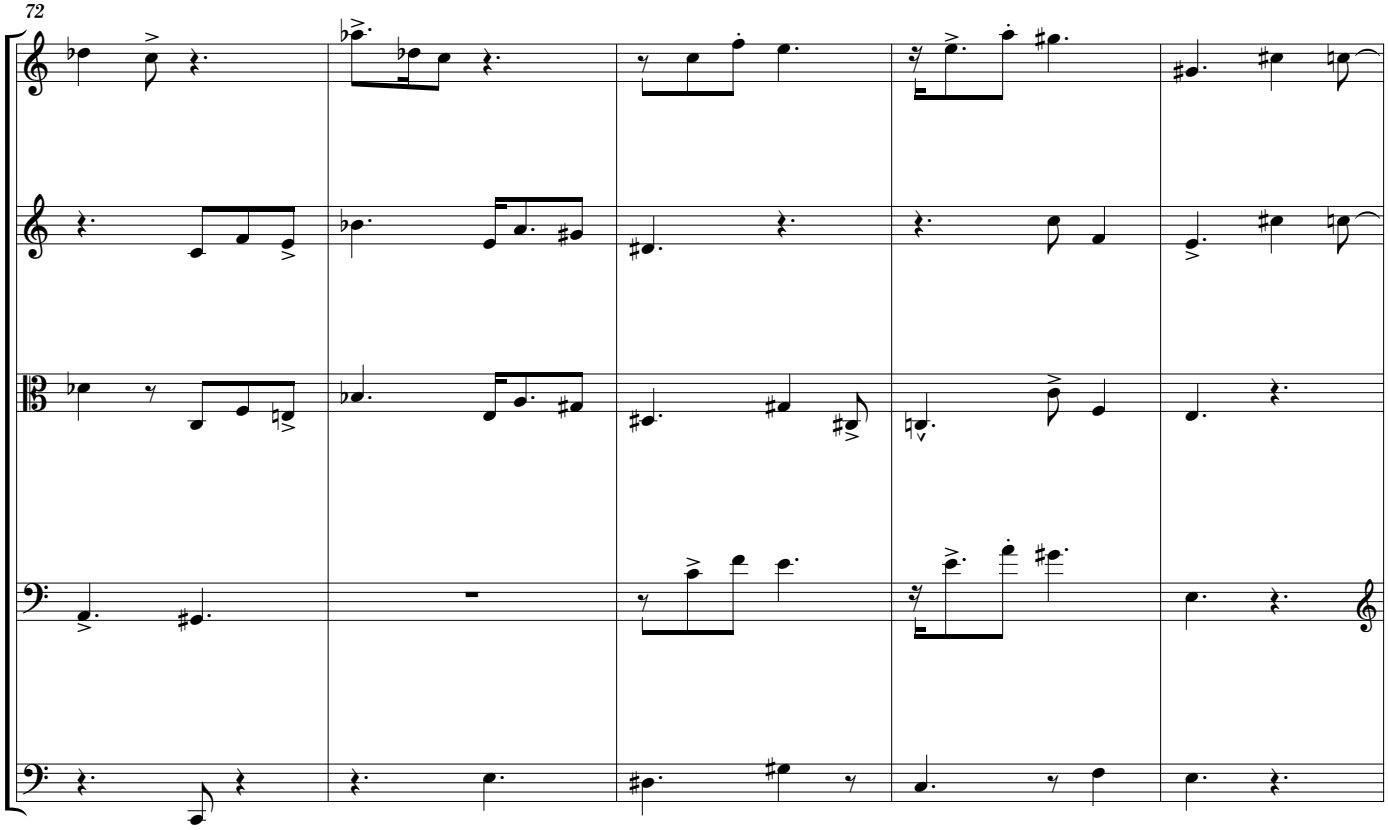

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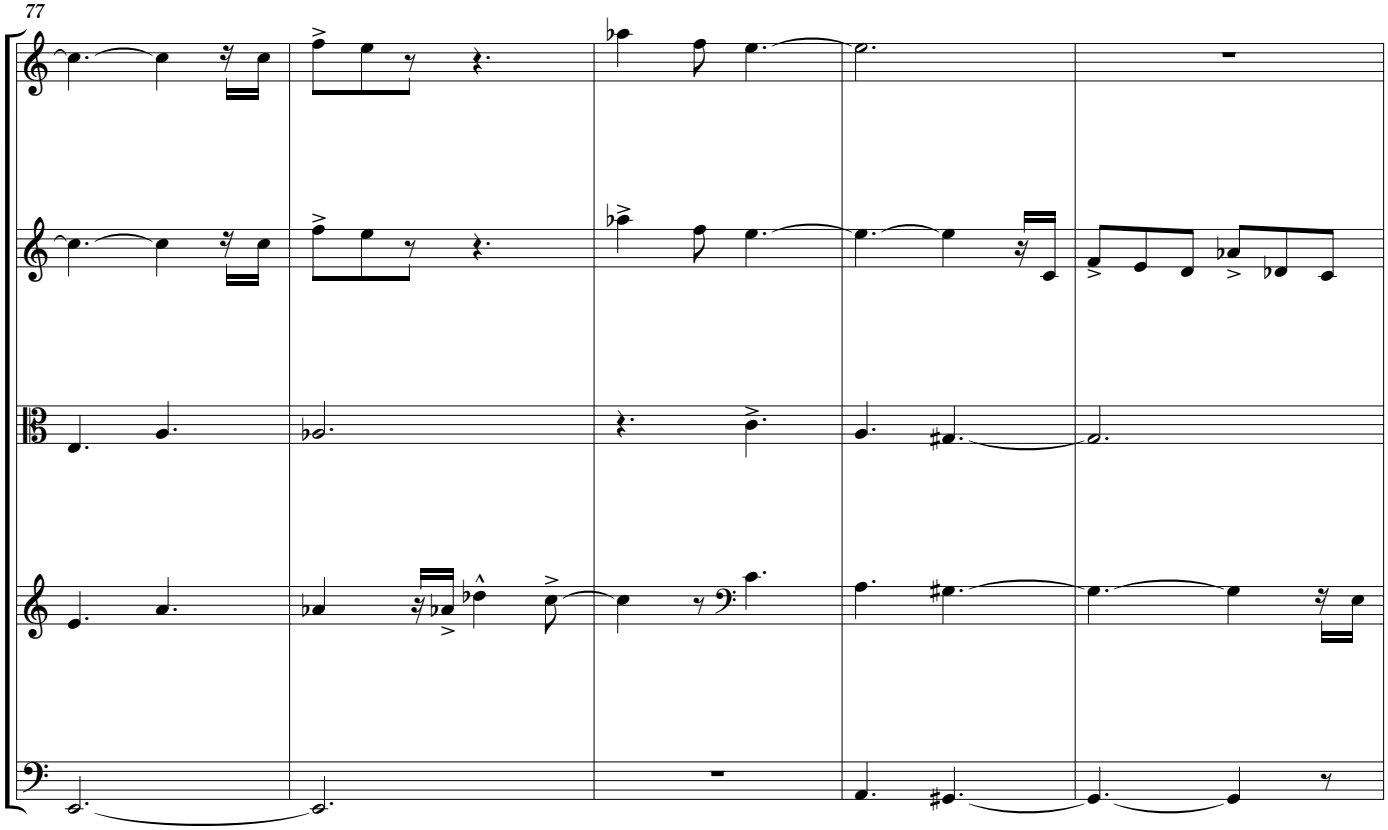

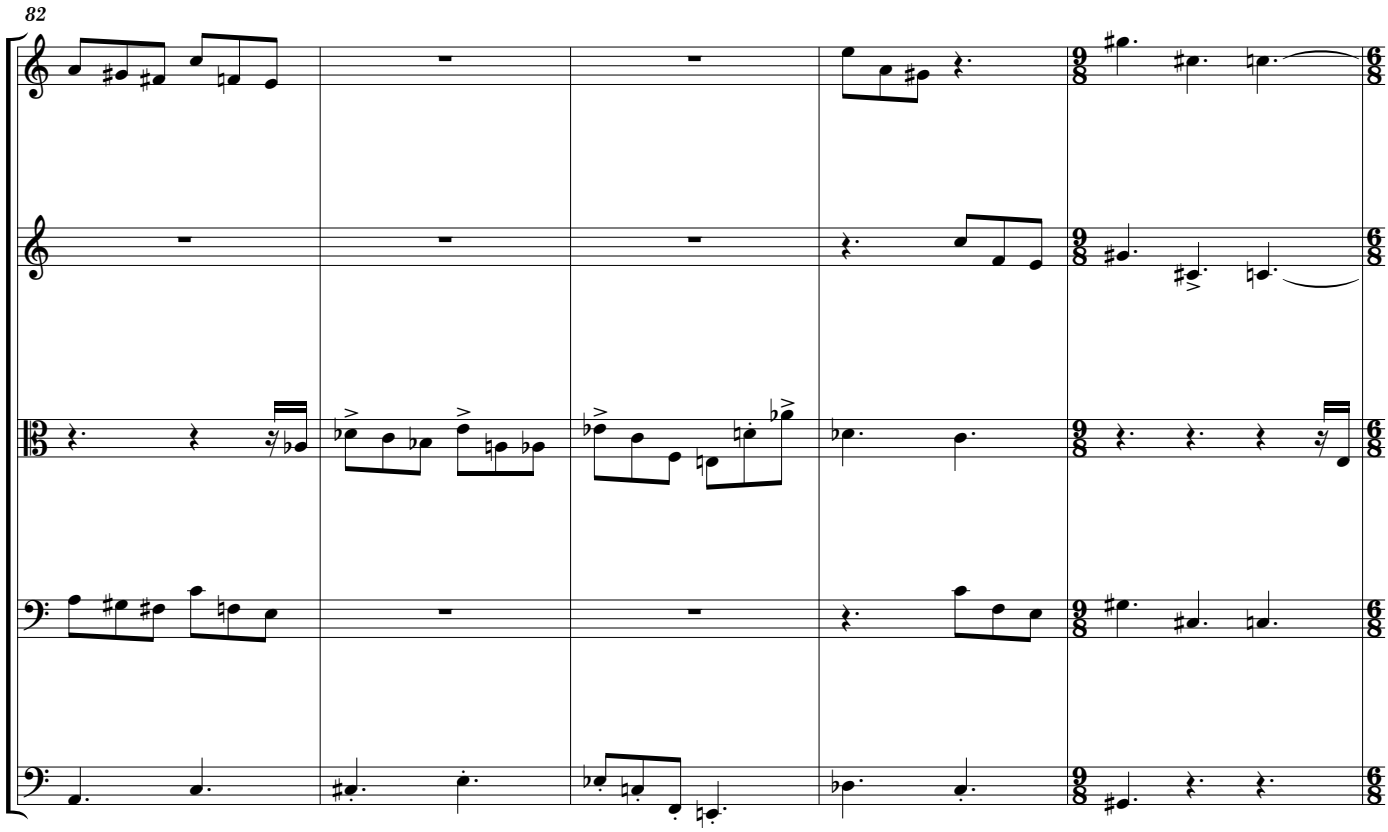
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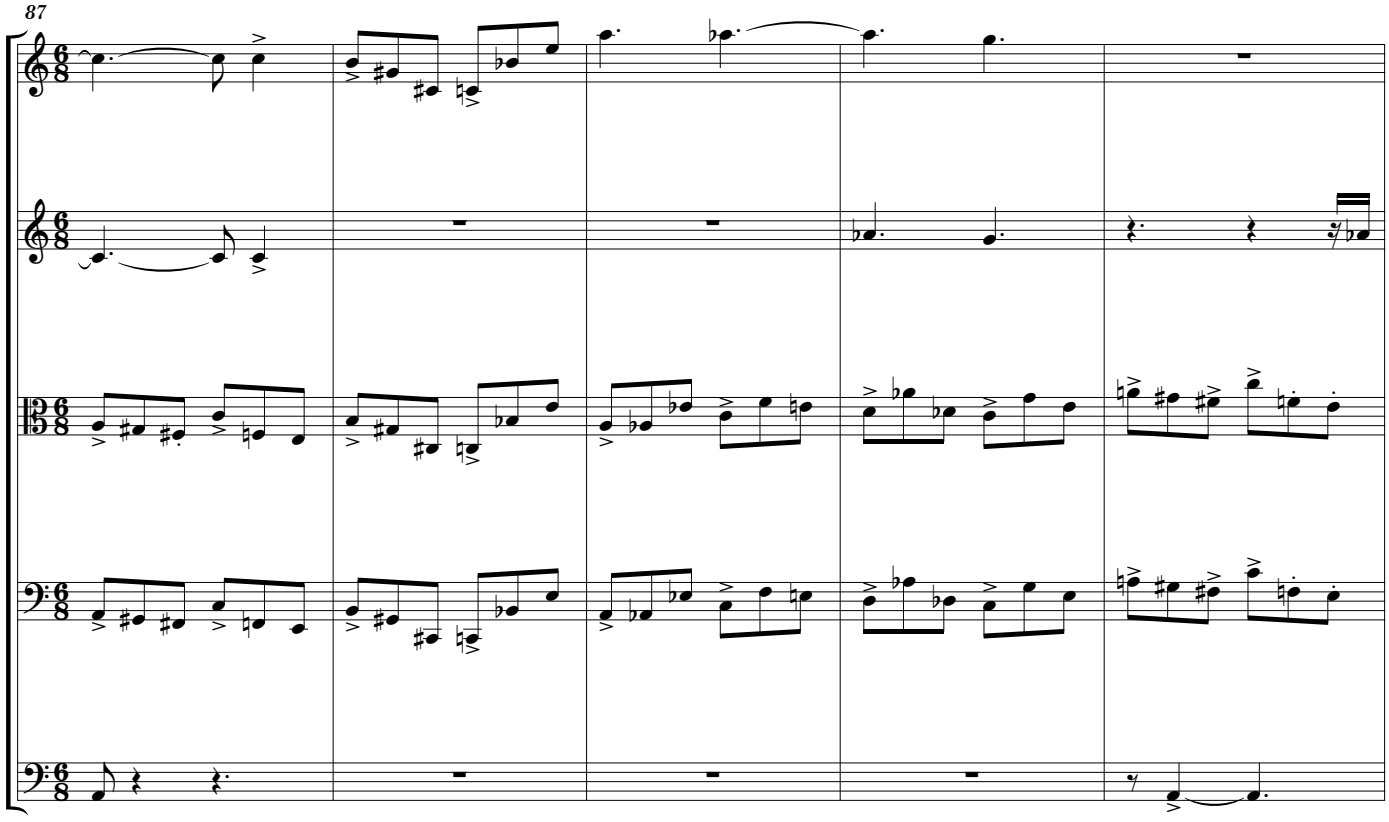
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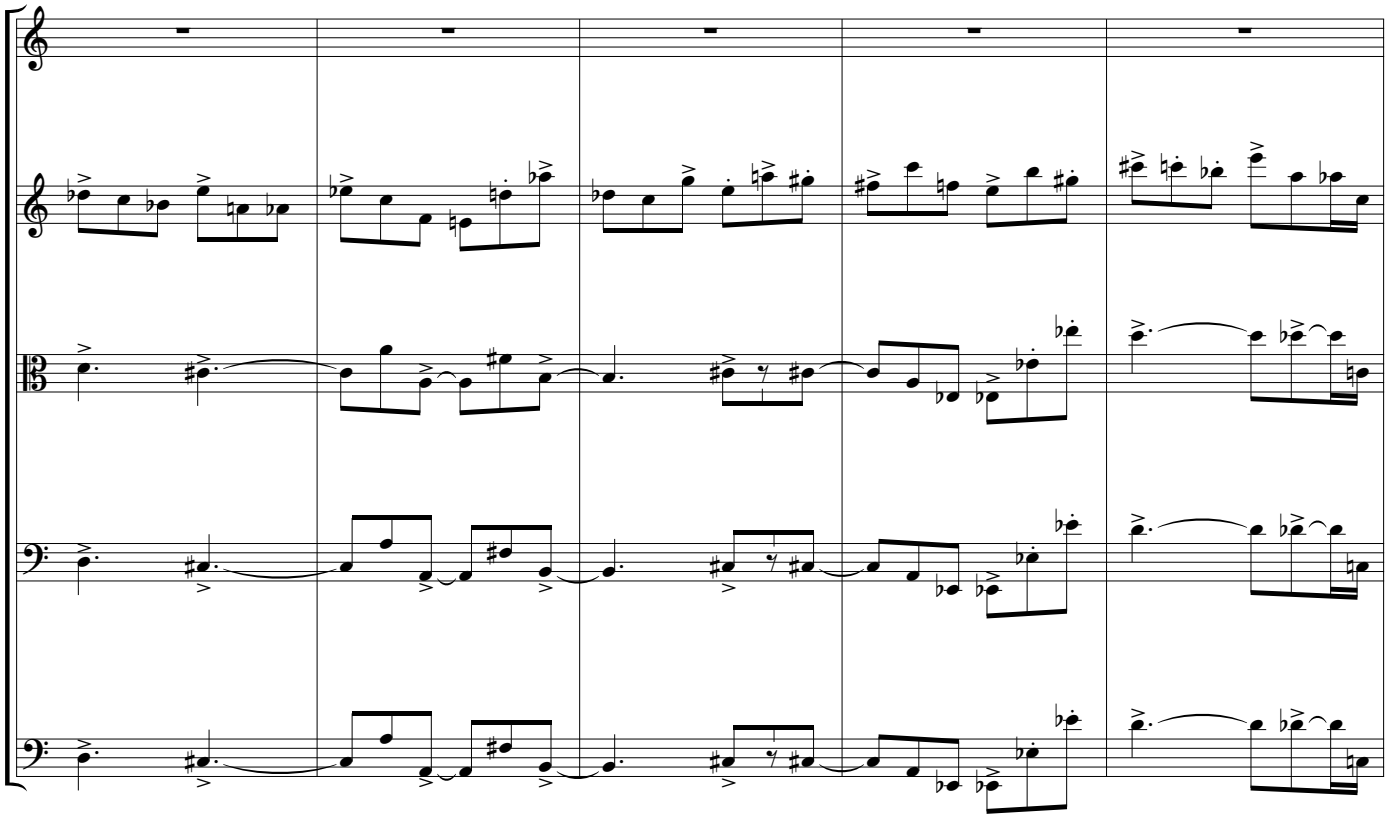

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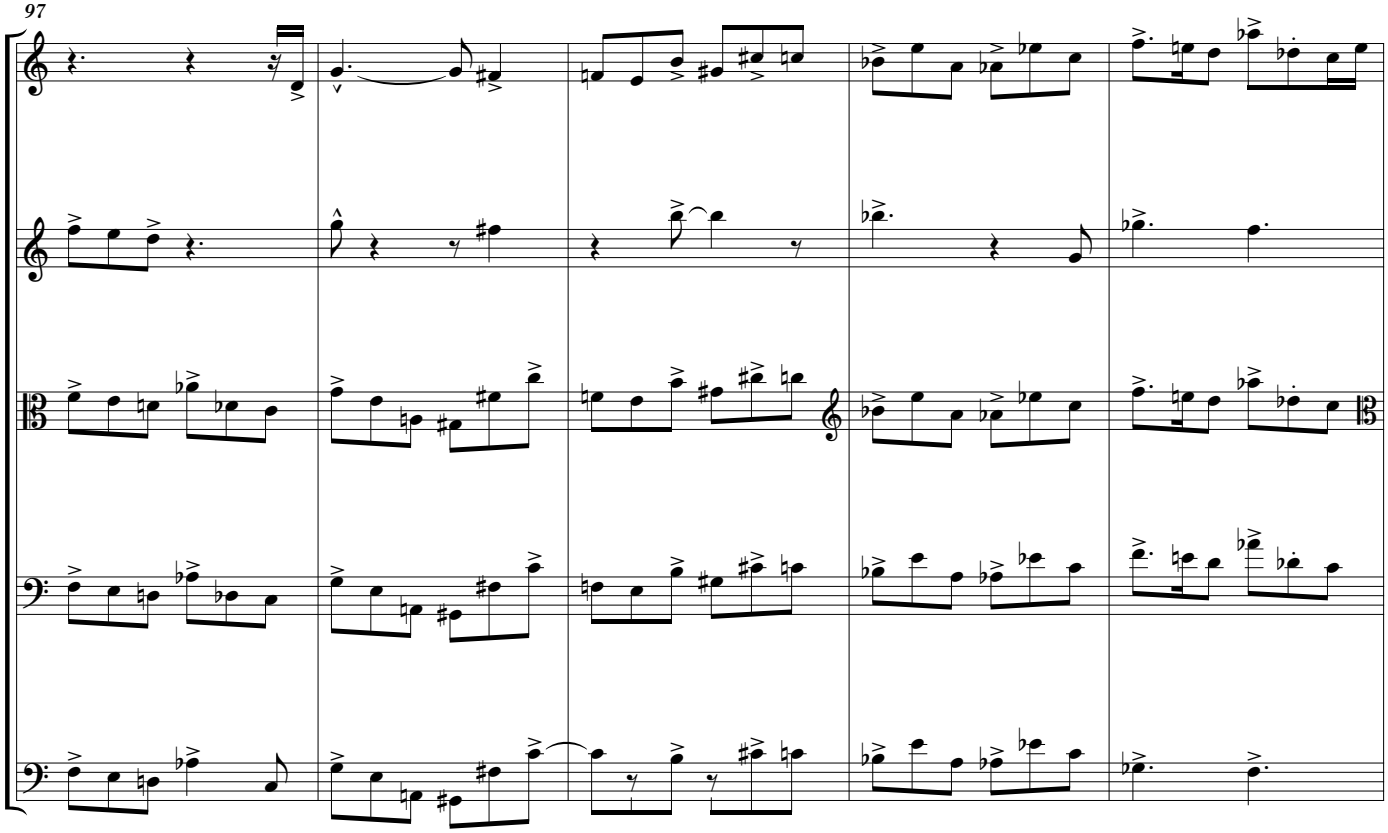

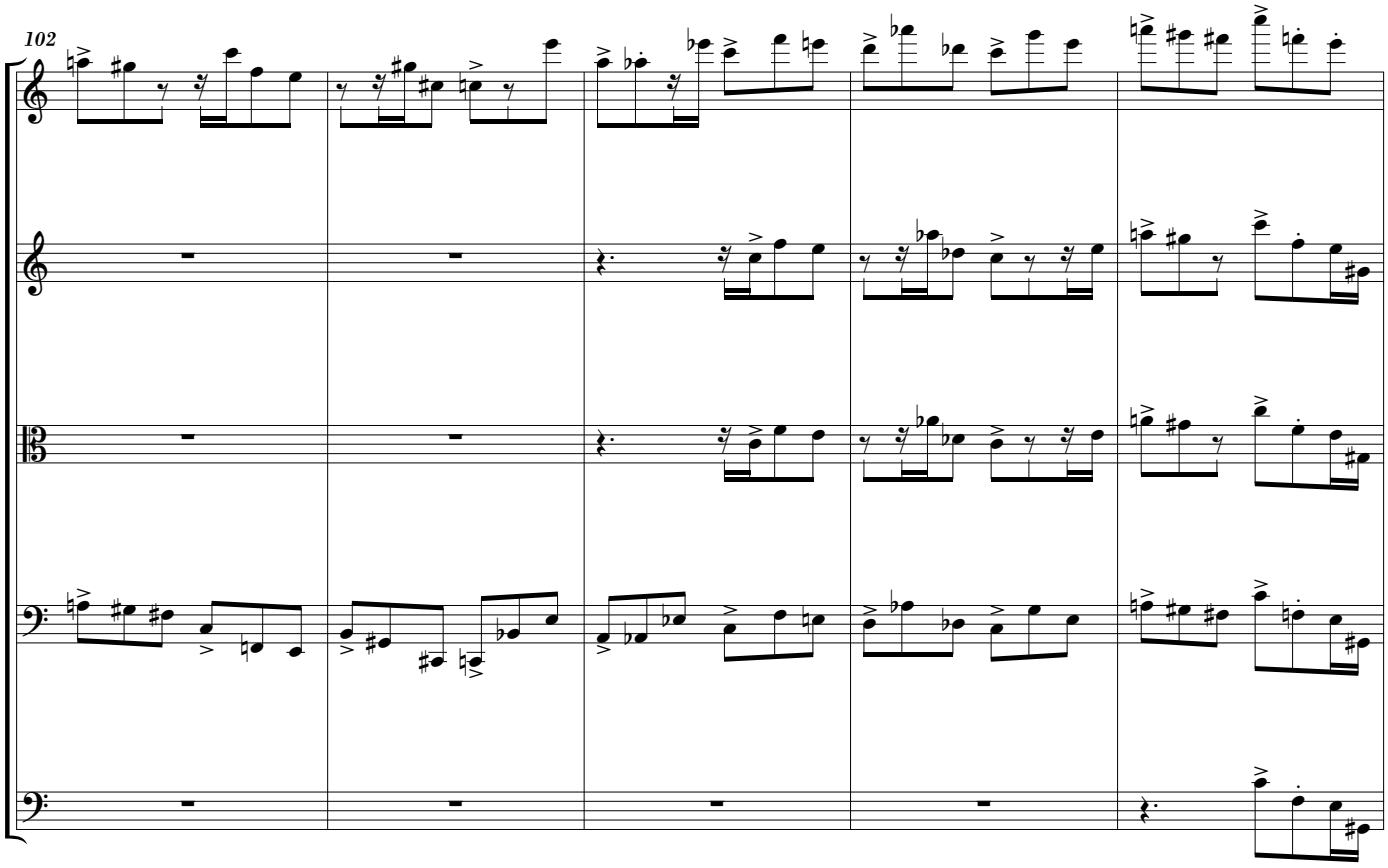
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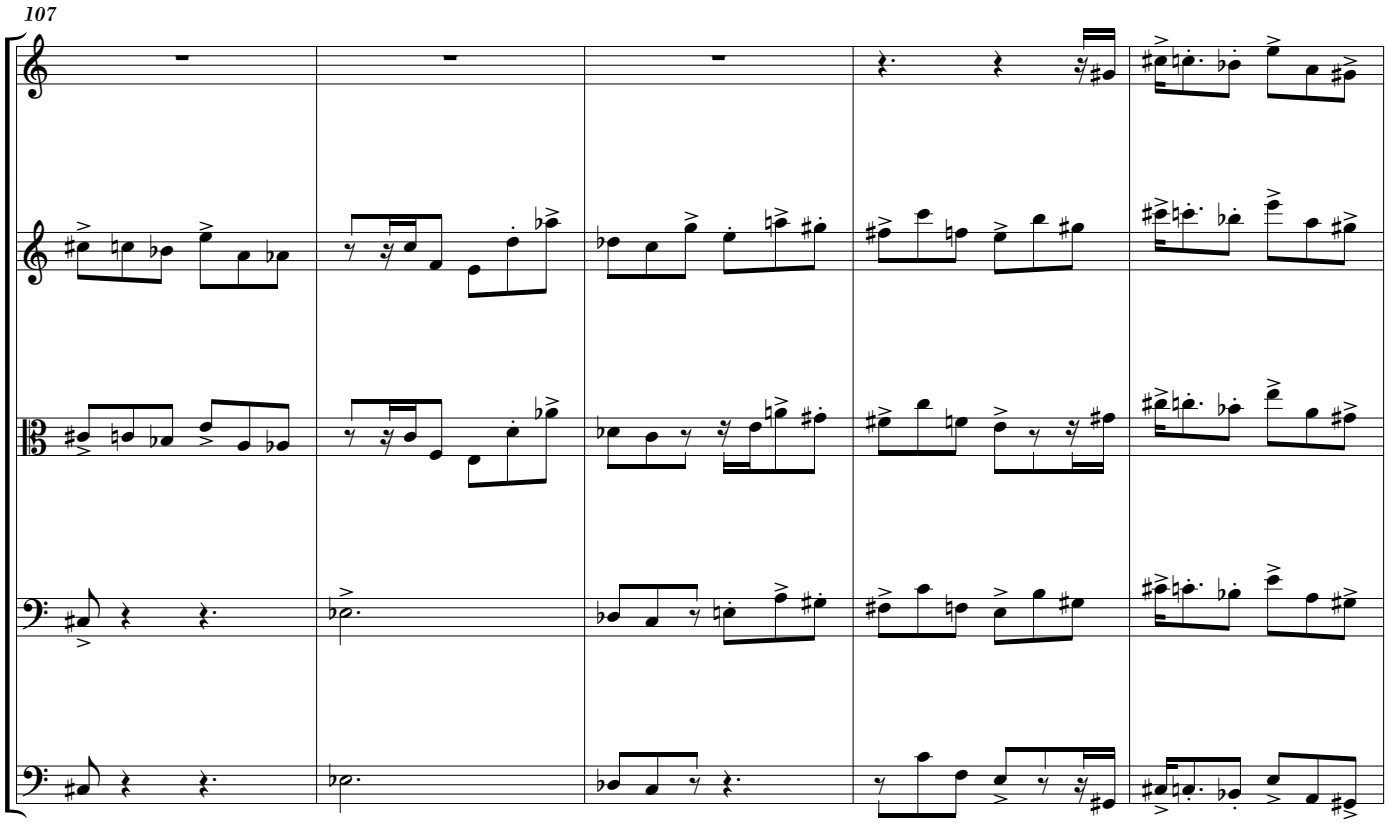
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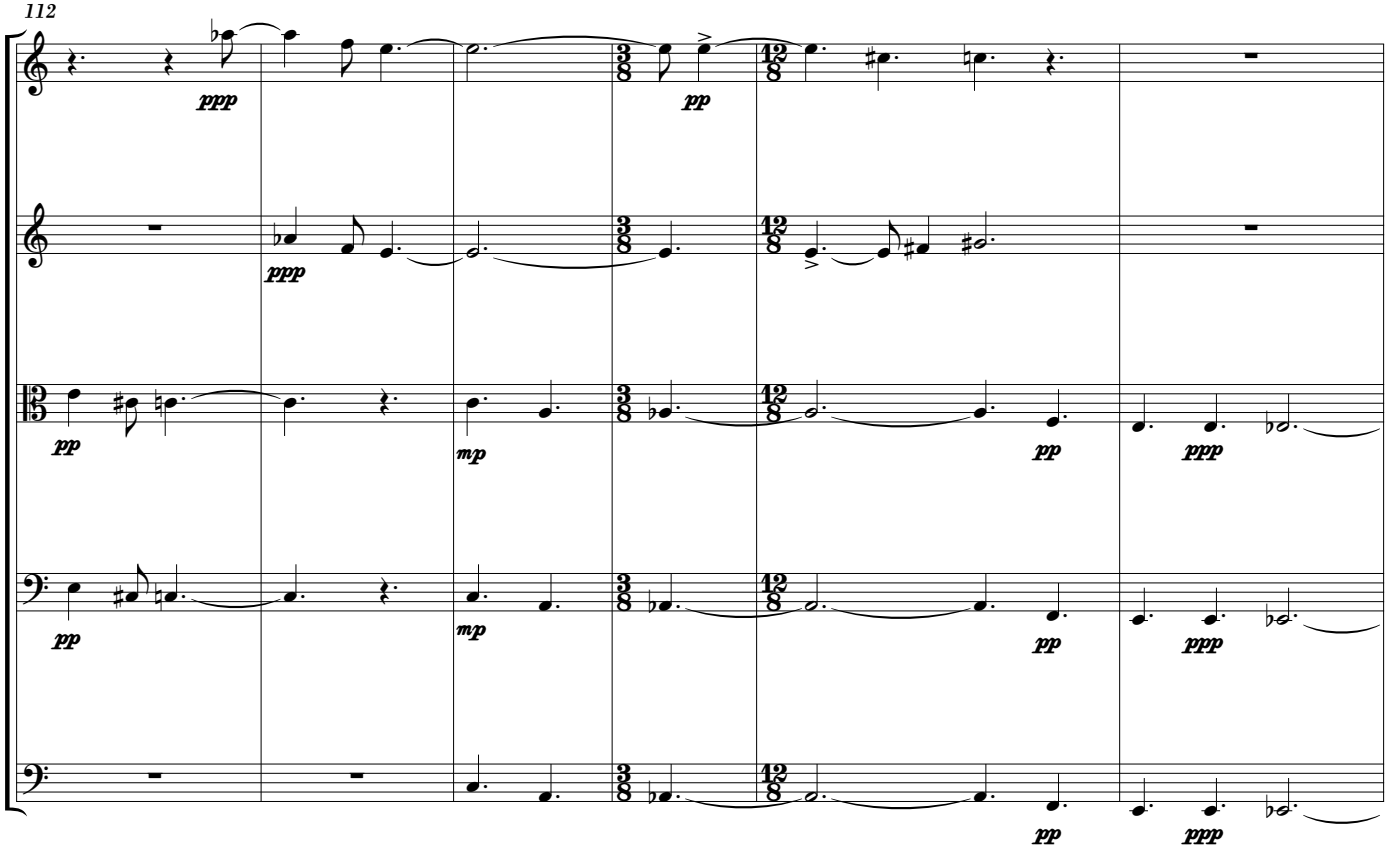

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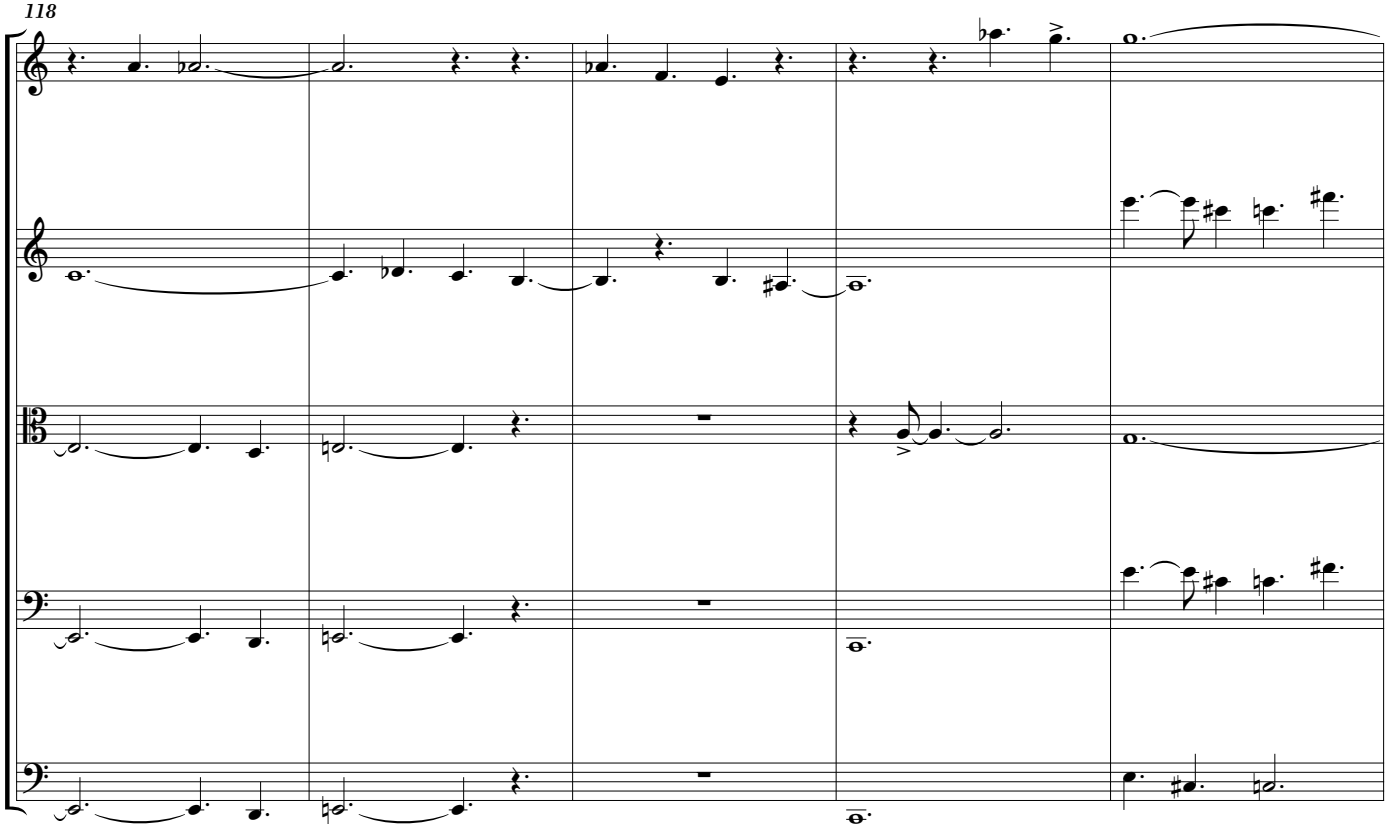
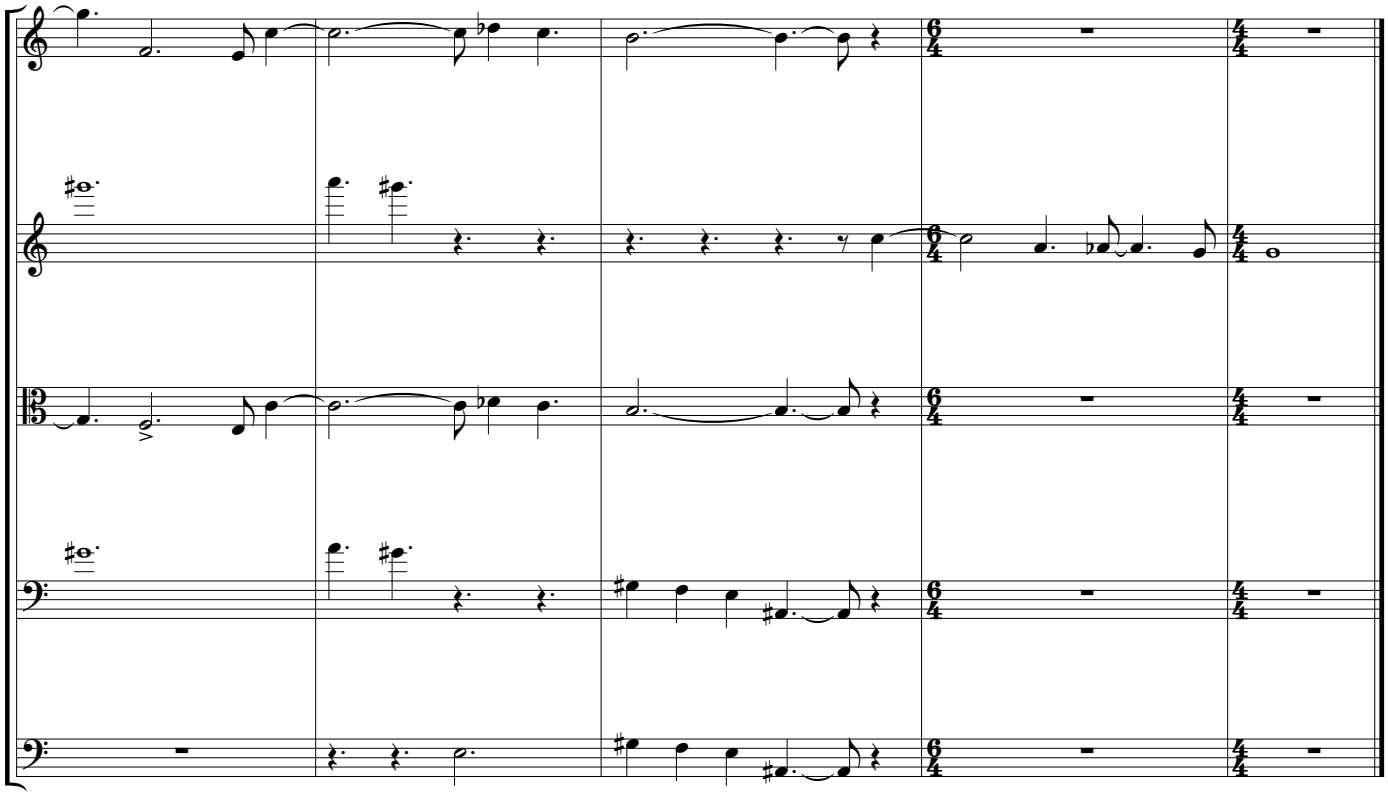
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