Peter McKenzie Armstrong

Dapper ’1’

for 10–track autopiano

[Score]

Opus 12a

Edition Ottaviano Petrucci

Dapper ’1’

Tinkering one day with the Fibonacci series, I wondered what might happen if, instead of adding always just the most recent two terms to get the one following, I were to add every pair of terms to get for each pair a new term in between:

starting with	1 2
one iteration giving	1 3 2
the next	1 4 3 5 2
and so on.	

I wrote a short generator (J–language script) and ran it to the point (in iteration #9) where it had output all integers between 1 and 88 –– the piano range –– at least once.

Except for this sampling’s unique final item, all its terms within range had occurred from 2 to 10 times each, with a few dozen others exceeding it.

Given these circumstances, I shaped a progression of equal durations, as follows:

> at each instance, a term within key range is allocated to one of 10 unique–volumed tracks, according to the term’s occurrence tally at that instance;
>
> for each term (MIDI key number) so assigned, a rest is placed in corresponding position on all other tracks;
>
> terms above range are realized as rests on all tracks (i.e., their time component is preserved);
>
> an additional track, a copy of #1 but with the rest slots filled in by extension of their just–previous notes, inte–grates and highlights the pattern of first occurrences.

Dreadful ’0’

Then, comeuppance. Browsing at the "On–Line Encyclopedia of Integer Sequences" (OEIS), I encountered for the first time Stern’s biatomic array (https://oeis.org/A002487).

When run for two iterations beyond the series I had improvised, this one clearly *subsumed* the latters’s output!

The difference, Stern seeds "0 1" replacing my hazarded "1 2", exposes something extraordinary at work: with this "0 1" start, every generator iteration first replicates the just–previous one, before appending then a continuation of its own.

OEIS presents several offshoots. My improvised script output the sequence as follows:

starting with	0 1
one iteration giving	0 1 1
the next	0 1 1 2 1
and so on.	

Run this way well into its 11th iteration (to build up from 0), the procedure now filled the 88–slot range only after 1276 terms, accumulating an occurrence–frequency maximum of 42.

Musical realization here, to be conceptually as before, called for selective re–specifying, as follows:

> there are now 42 unique–volume–specific tracks, necessarily at much narrower volume differences;
>
> tempo is now 4–fold, to put so many more events into a time span compatible with *Dapper ’1’;*
>
> a 3–second coda cascades the first occurrences.

Scores

Dapper ’1’ is written in full score, as it has few enough tracks to fit a 11x17 page. *Dreadful ’0’*, with too many to fit, is written instead as separate parts. In any case, neither score is intended to facilitate human performance. The music is for auto–sequencer. I did, however, want to give its overall patterning visual realization. Hence this style –– with alto clef exclusively (Middle C in the middle!) to spare the eye an incessant disruption of clef changes. The LilyPond files rework drafts I had initially exported from Rosegarden.

These pieces are named for what strikes me as their "character" –– ultimately their comfy vs jagged patterns of volume distribution.

Audio

I built each movement in Rosegarden’s matrix editor, exported .mid files, and combined these as one .wav. Playing time is 78 secs.

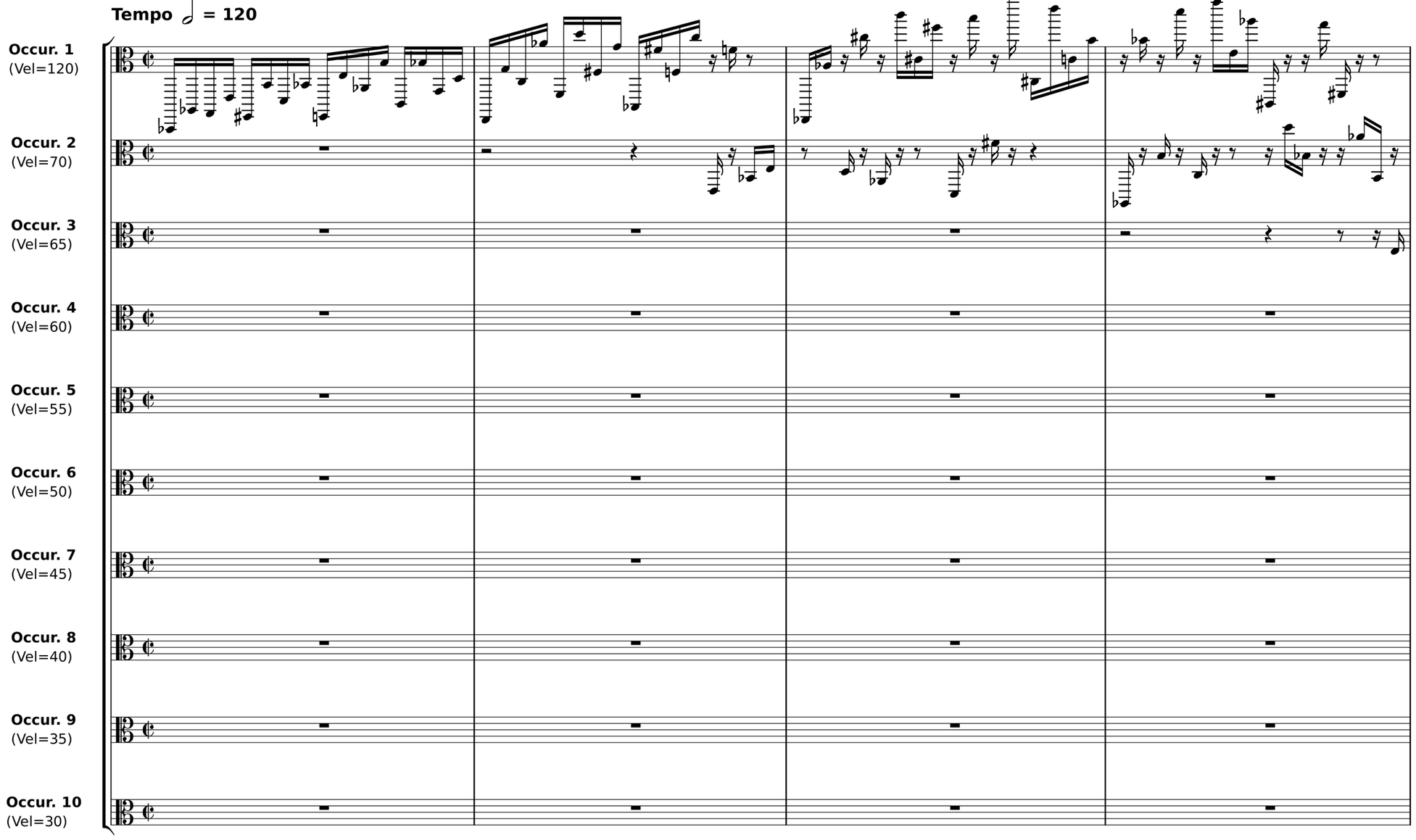
– PMA

Dapper '1'

for sequenced MIDI piano

Peter McKenzie Armstrong

Opus 12a



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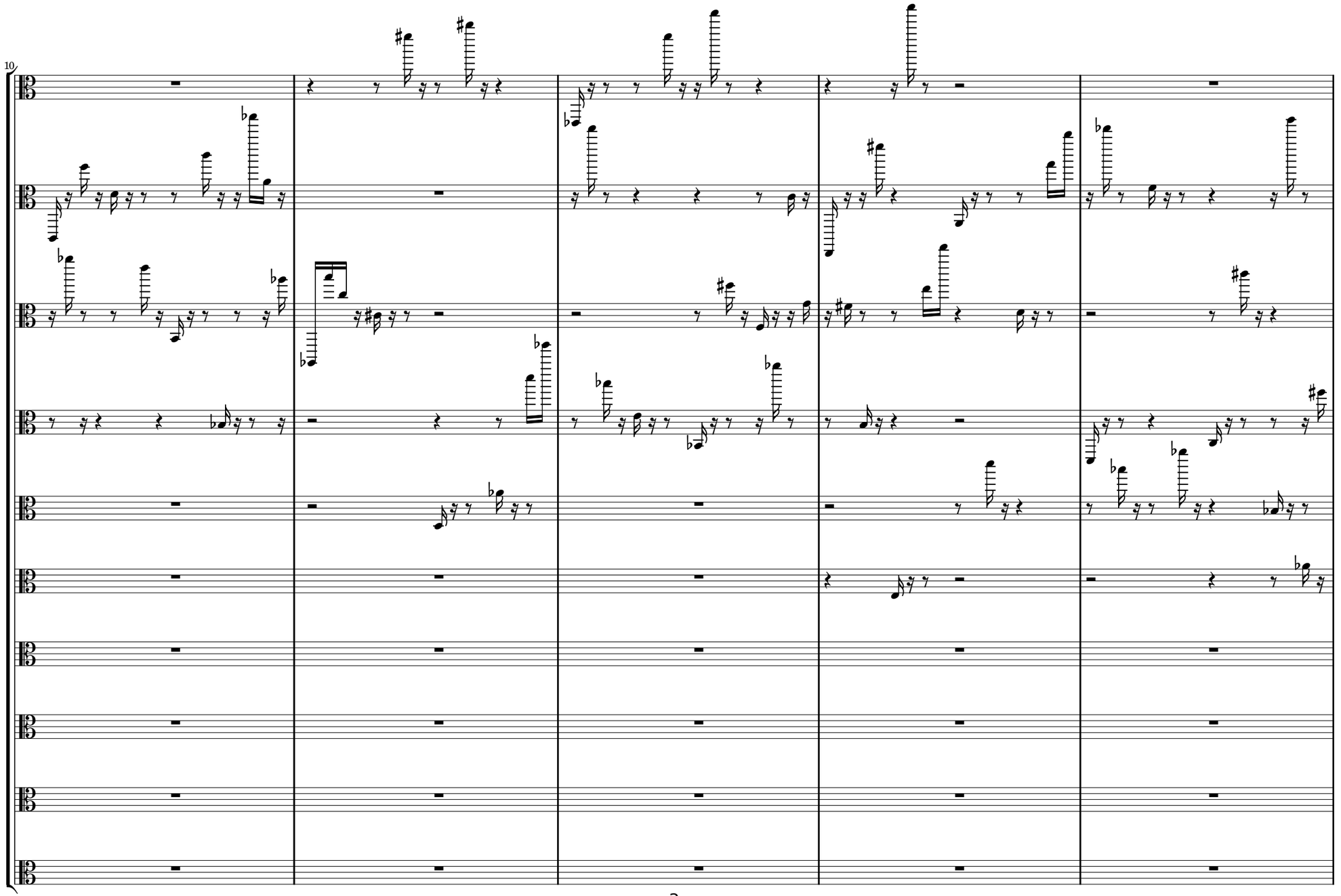

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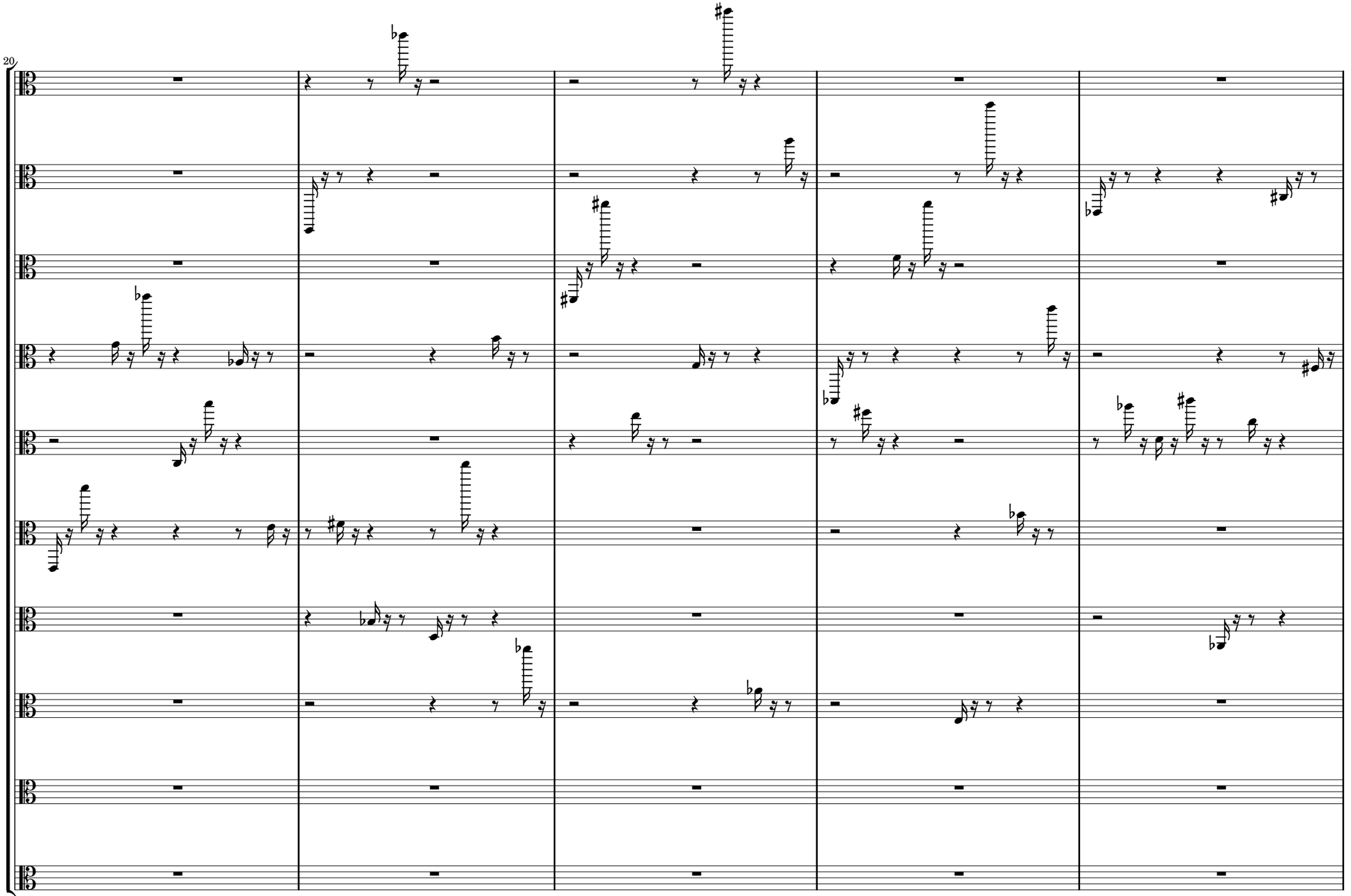
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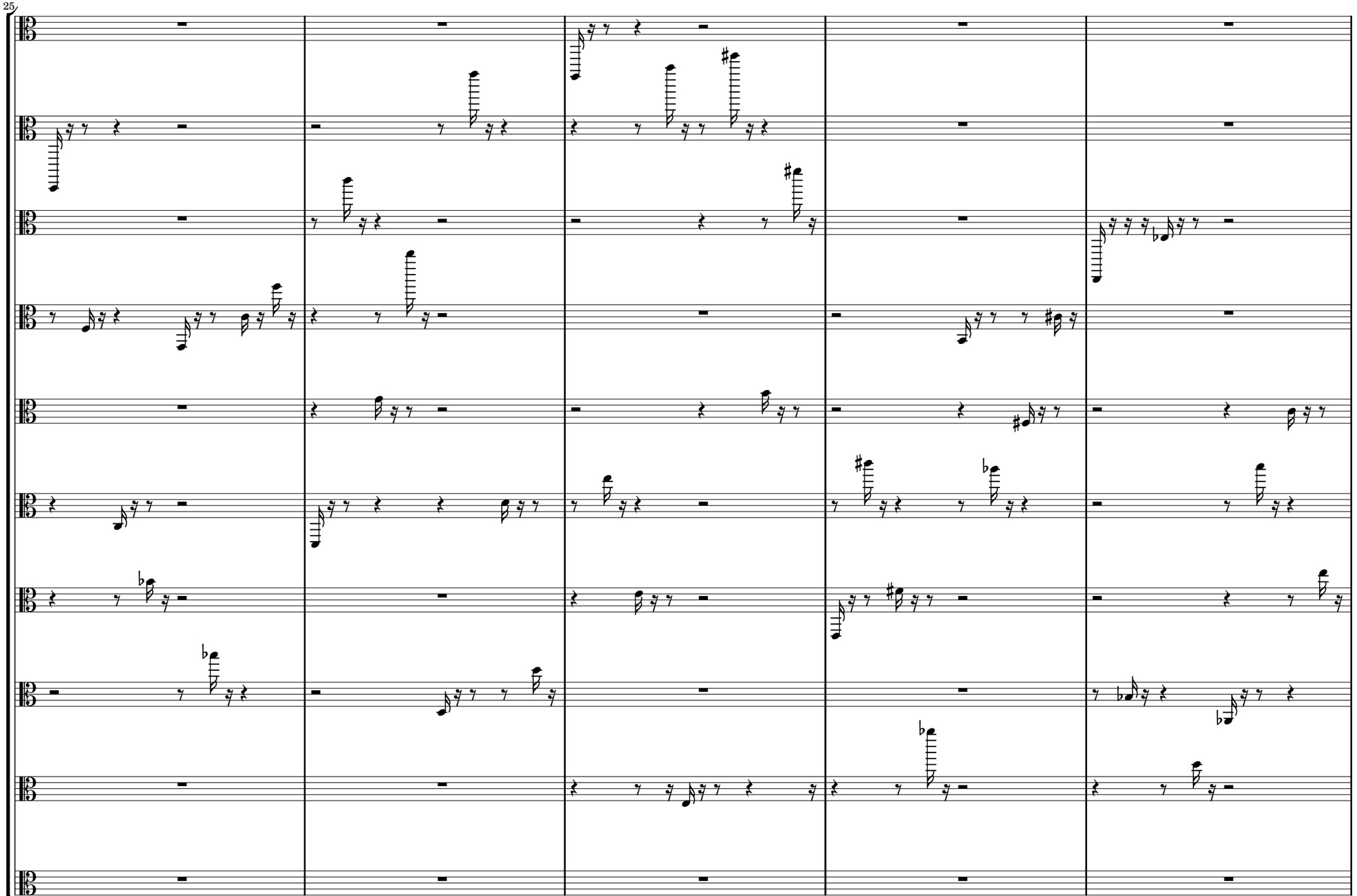

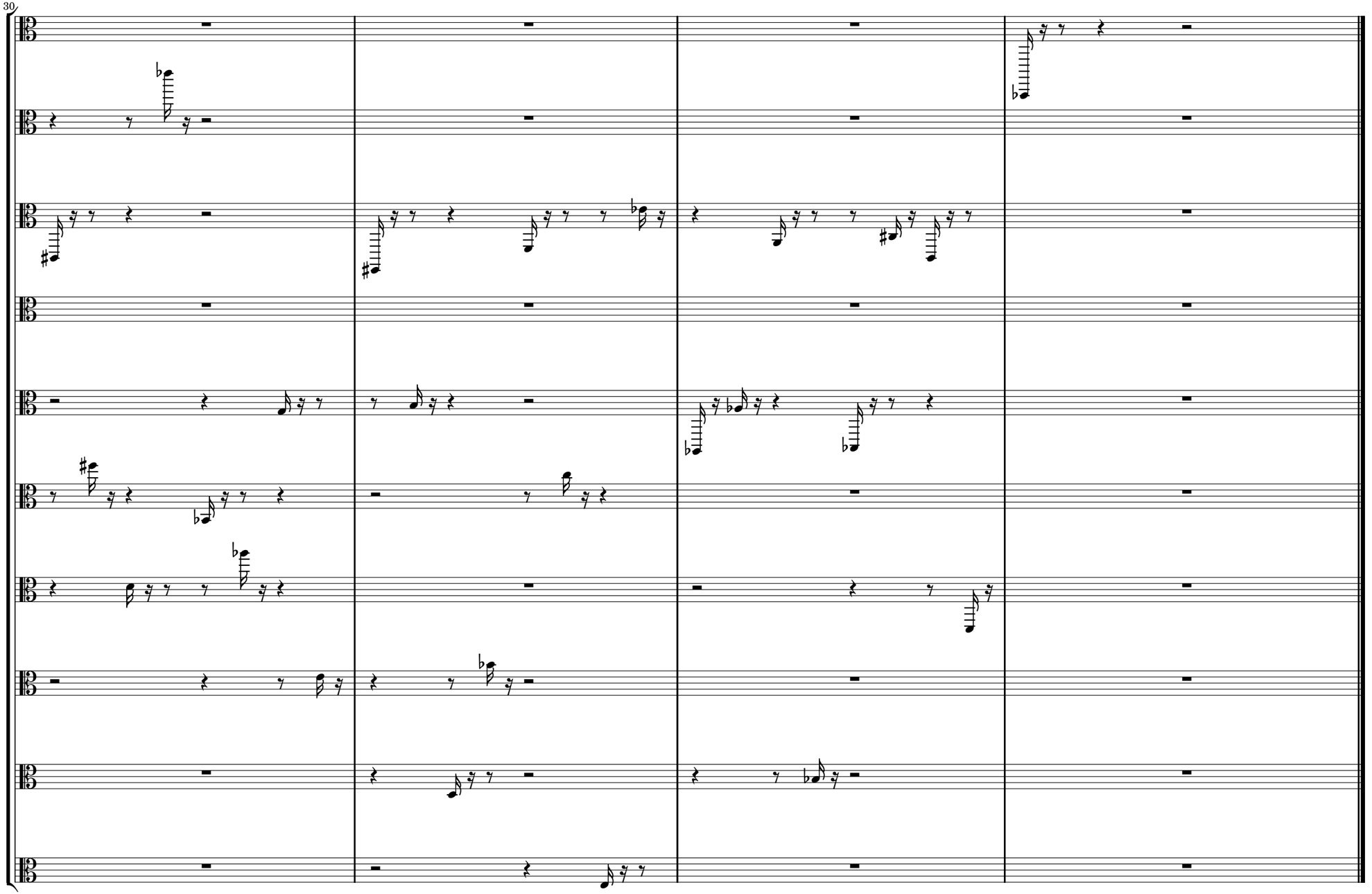

Music engraving by LilyPond 2.13.32--www.lilypond.org