Ethereal Presence

for Cyberinet

Matthew A. Bardin

2023

MaB Music

On the Cyberinet:
The Cyberinet is an electronic enhancement to the standard B-flat clarinet. By replacing the barrel with the Cyberinet, the performer and composer gain access to an integrated collection of sensors that collect various performance data. This data can be wirelessly transmitted to a computer for electronic processing and software control. An ever-growing list of optional expansions is also available to be connected to the Cyberinet to allow for the performer to customize the instrument to their performance needs.

The complete list of hardware needed for this composition is:

The Cyberinet
- Microphone
- Audio Interface
- Computer running the Max patch available here: *matthewbardin.com/ethereal*

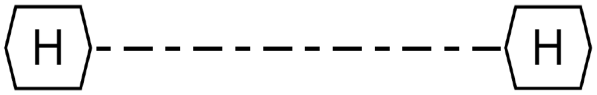
On Notation:
This score uses largely traditional notation. Fermatas and long rests can be held for any duration. Half rests and shorter should be played in tempo.
Double Bar lines indicate different sections of the work and do not imply a pause.
Dashed bar lines are provided to help with counting various sections, but may be ignored by the performer if desired.

Specific performance gestures are used in order to control the software portion of this composition. These gestures are used to control and alternate between two different effects applied to the accompanying sound, and are represented with three different symbols.

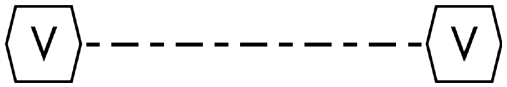
This symbol circular indicates making a quick, counterclockwise rotation of the instrument with the wrist. The general position of the instrument should not change, as the rotation axis is Cyberinet itself. This gesture is used to swap between the active synthesizer.

These lines indicate that the performer should perform exaggerated horizontal or vertical movements during the music underneath the lines. These movements should generally be slow, gradual movements in order to avoid confusion with the switching trigger. However, the performer should experiment in order to find the exact size and speed for the effect they desire. The symbols below indicate speeding up or slowing down the vertical gesture respectively.

Moving Horizontally to the left will increase the amount of background noise present, while moving right will decrease the amount. (See On Software for more effect information)



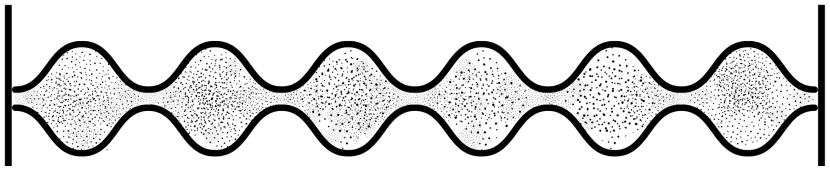
Moving the bell up will increase the pitch of the FM synthesizer, while moving down will decrease it. The upper frequencies are filtered off to avoid uncomfortably high frequencies. (See On Software for more effect information)



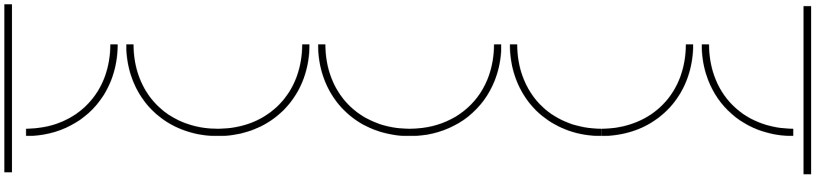
When the switches occur, data from the previous effect is stopped, and new data is fed into the new synthesizer. This results in the synthesizers holding their state until the next switch. The FM synthesizer will gradually fade out to avoid a constant drone.

In addition to notation the gestures, the approximate effect is notated on the second staff in the score.

This symbol represents the fluctuating range of the filtered noise.



This symbol represents the raising and lowering pitch of the FM Synthesizer.



On Software:
The Max patch for this composition can be downloaded at *matthewbaridn.com/ethereal*. The movement sensors are utilized for collecting data to control two synthesizers within the Max environment. The computer running this patch should be connected to an output speaker loud enough to match volume with the Soloist.

The first synthesizer generates backing through filtered noise. The range of frequencies allowed through the filter are determined by horizontal directional movement. These frequencies produce a textural background.

The second synthesizer produces A single through FM synthesis. The specific pitch is determined through a microphone placed in front of the performer to detect the pitch they are playing in real time. That value is then scaled based on the vertical position of the instrument. This tone is intended to accompany the soloist as a secondary voice.

Because the performer will perform at differing tempi and styles, they will have unique movements to be picked up by the Cyberinet. This will result in an ethereal accompaniment that is unique to every performance.

Program Note:
It is impossible to do anything in a complete vacuum. Others affect you, you affect others. How will you respond to these unexpected interactions?

Performance Notes:

Tempi are all approximate, and the performer can perform the piece at any desired tempo. Accelerando and Rallentando should still happen at the indicated places, but the amount can vary. The goal is a uniquely paced performance; no two should be identical. The performer should experiment with the speed and size of the gestures in order to find an effect amount that they prefer.

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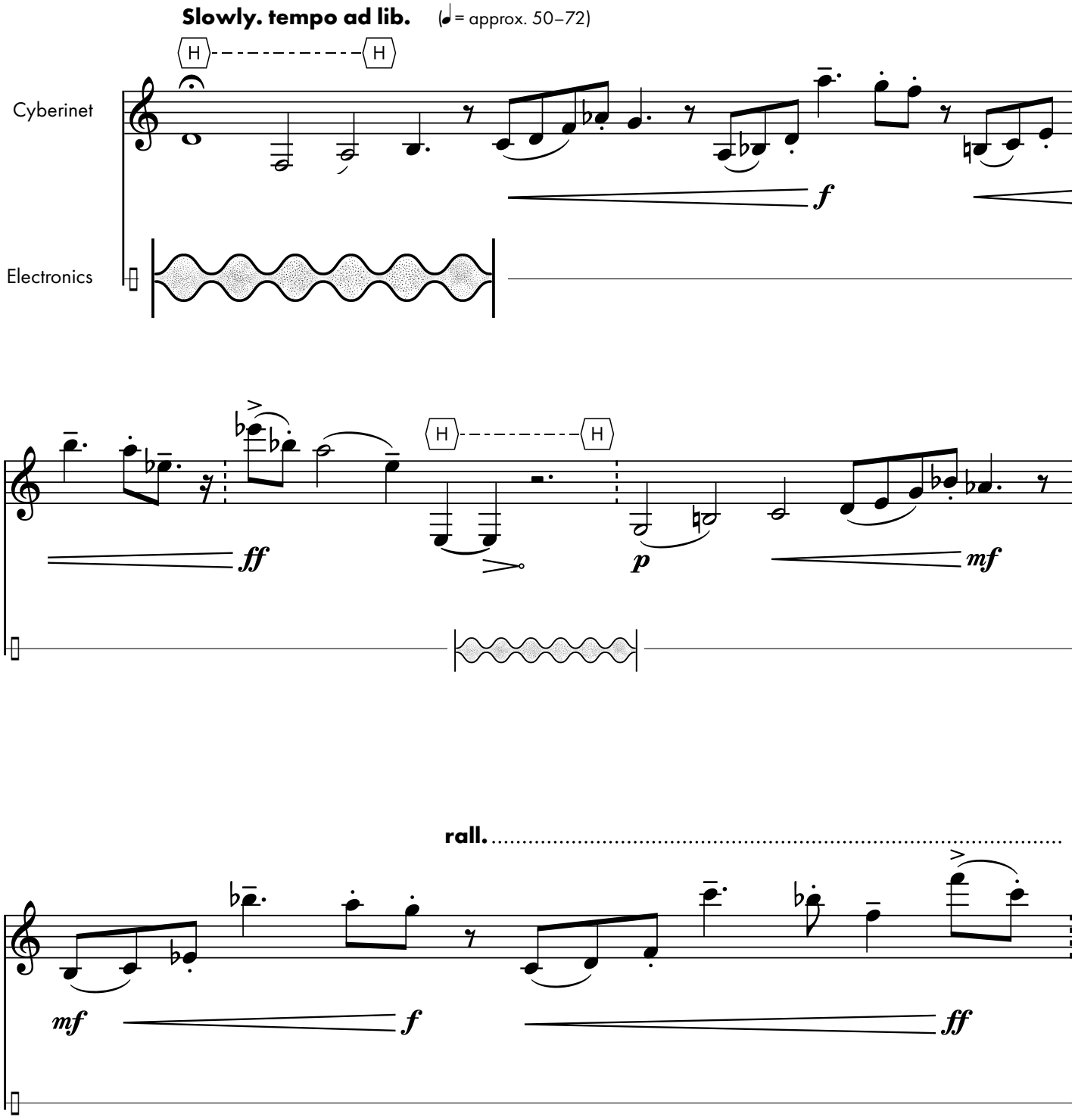
Matthew A. Bardin (2023)



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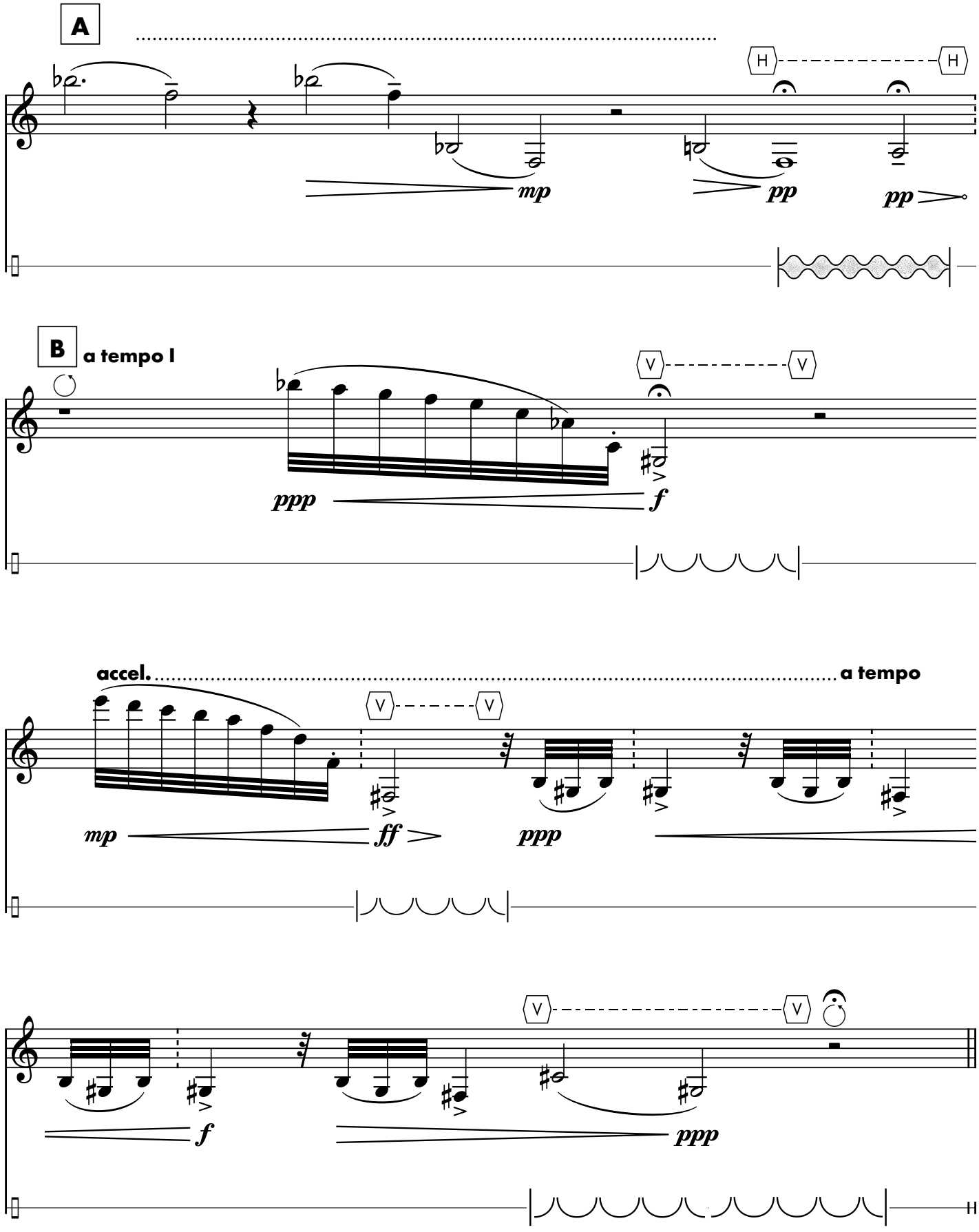
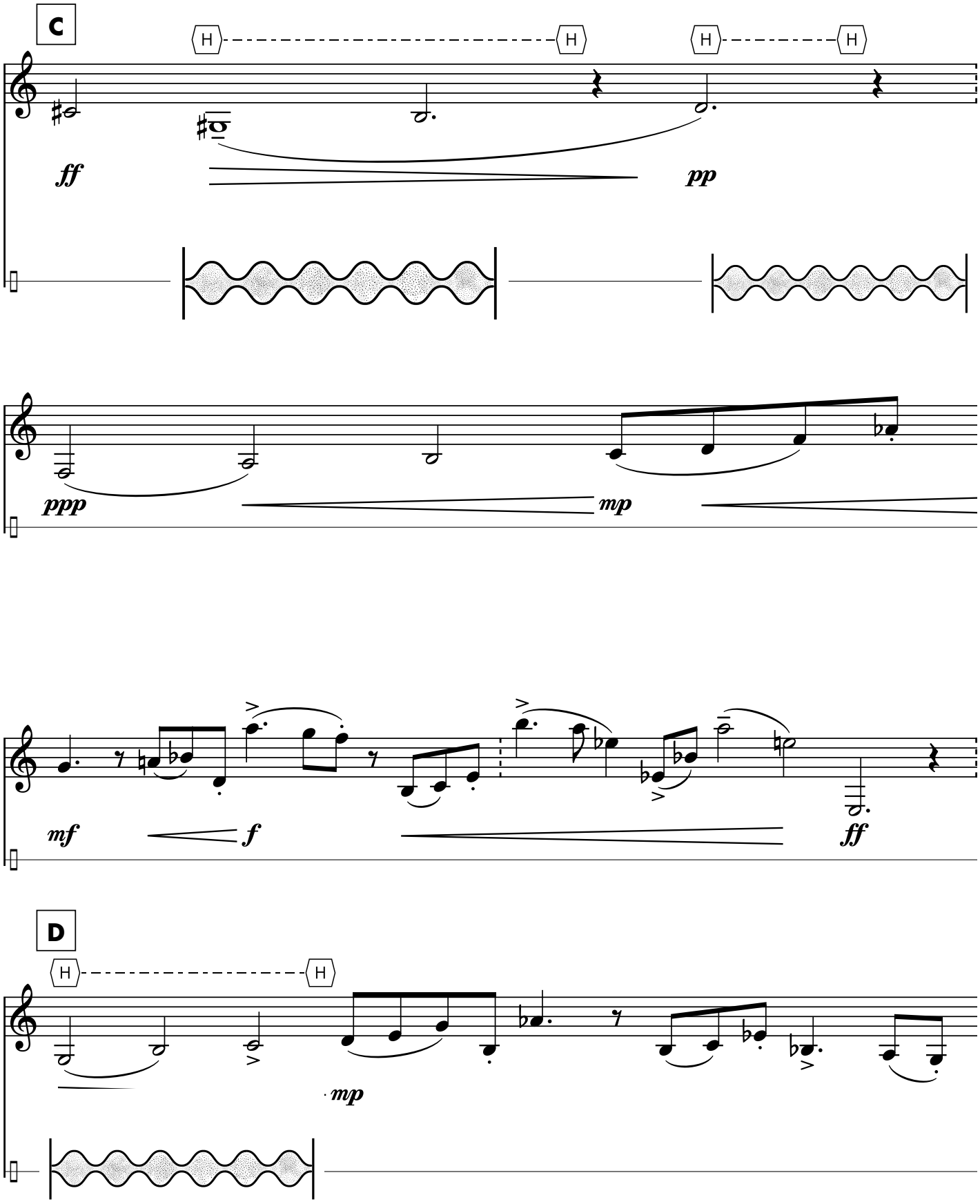

A
H
H
mp
pp
pp
B
a tempo I
V
V
ppp
f
accel.
a tempo
V
V
mp
ff
ppp
V
V
f
ppp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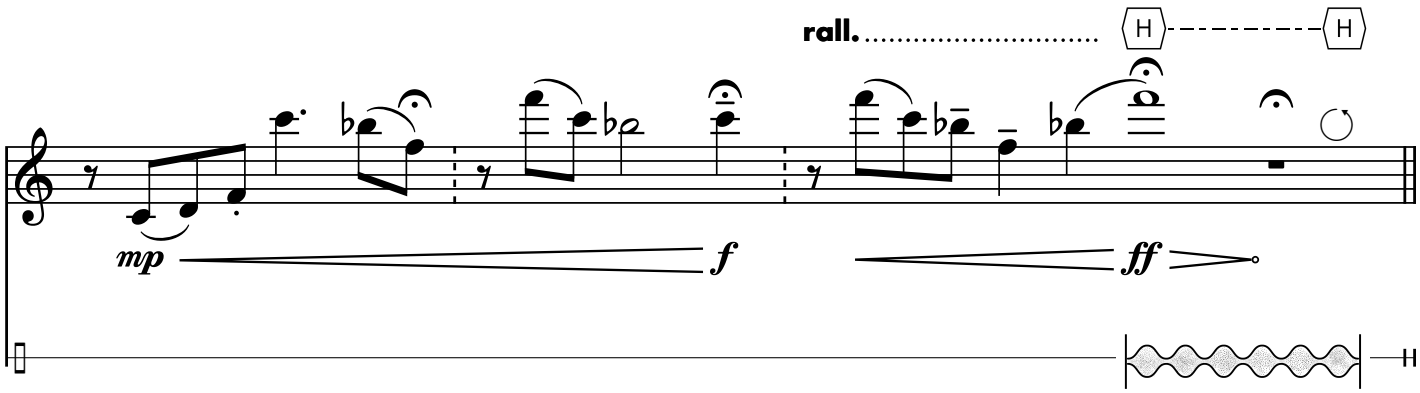
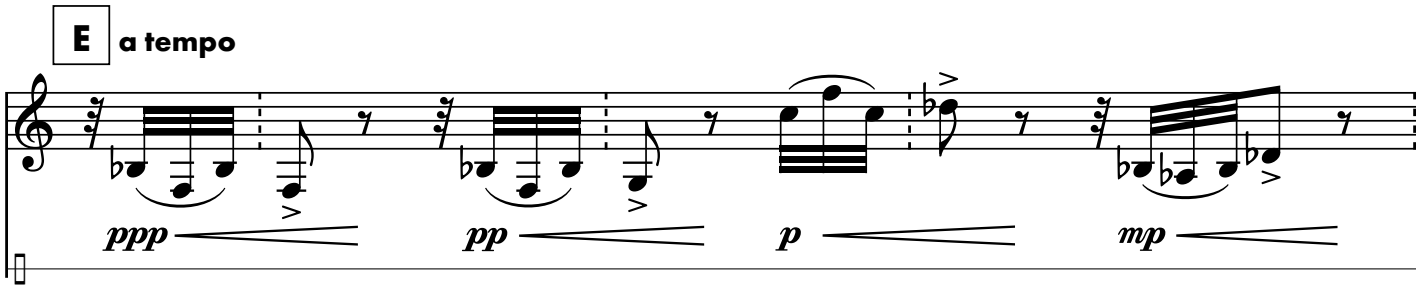
H
H
H
ff
pp
ppp
mp
mf
f
ff
D
H
H
mp


rall.
H
H
mp
f
ff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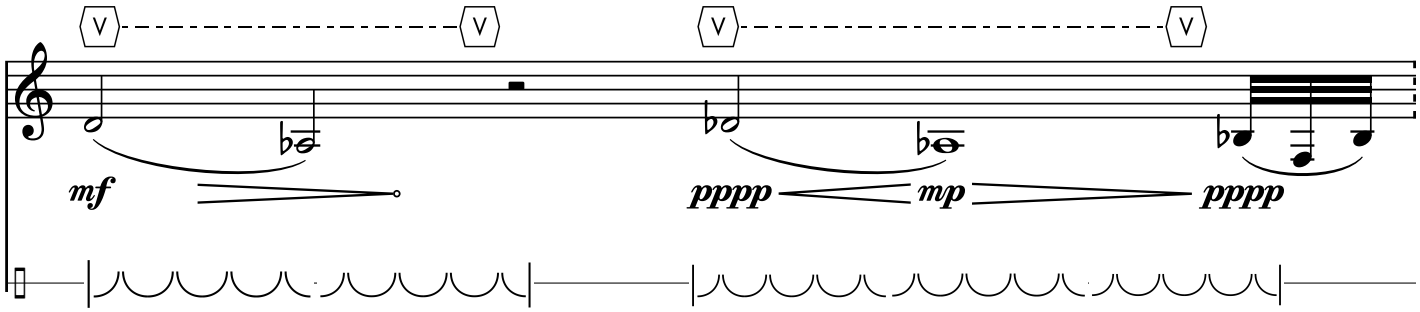
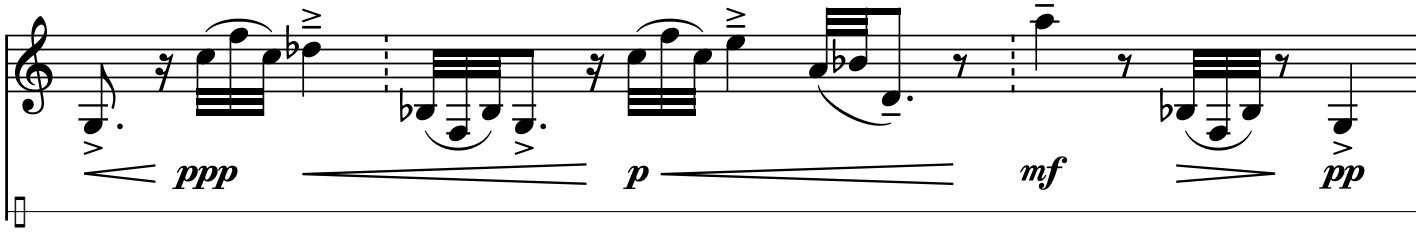
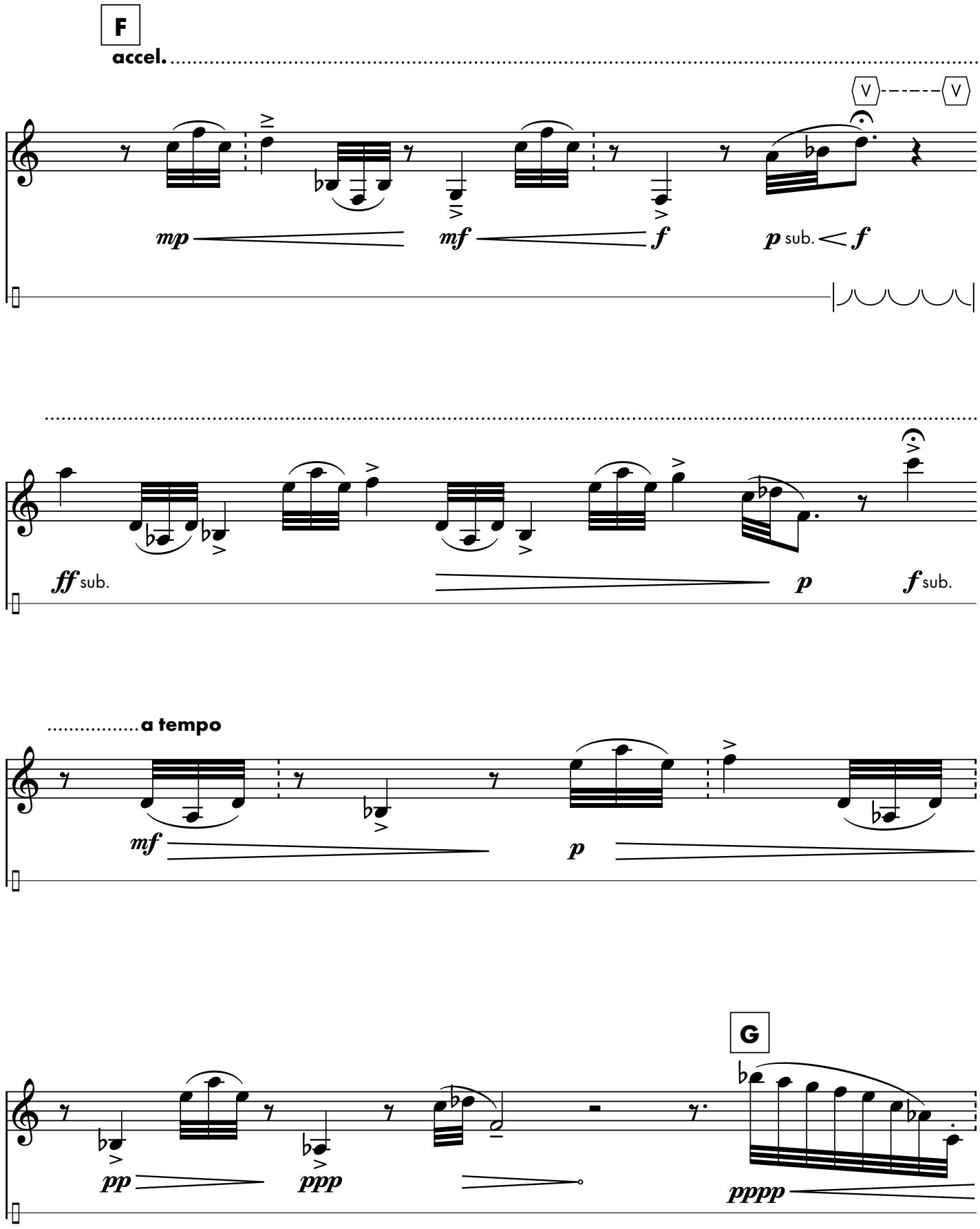
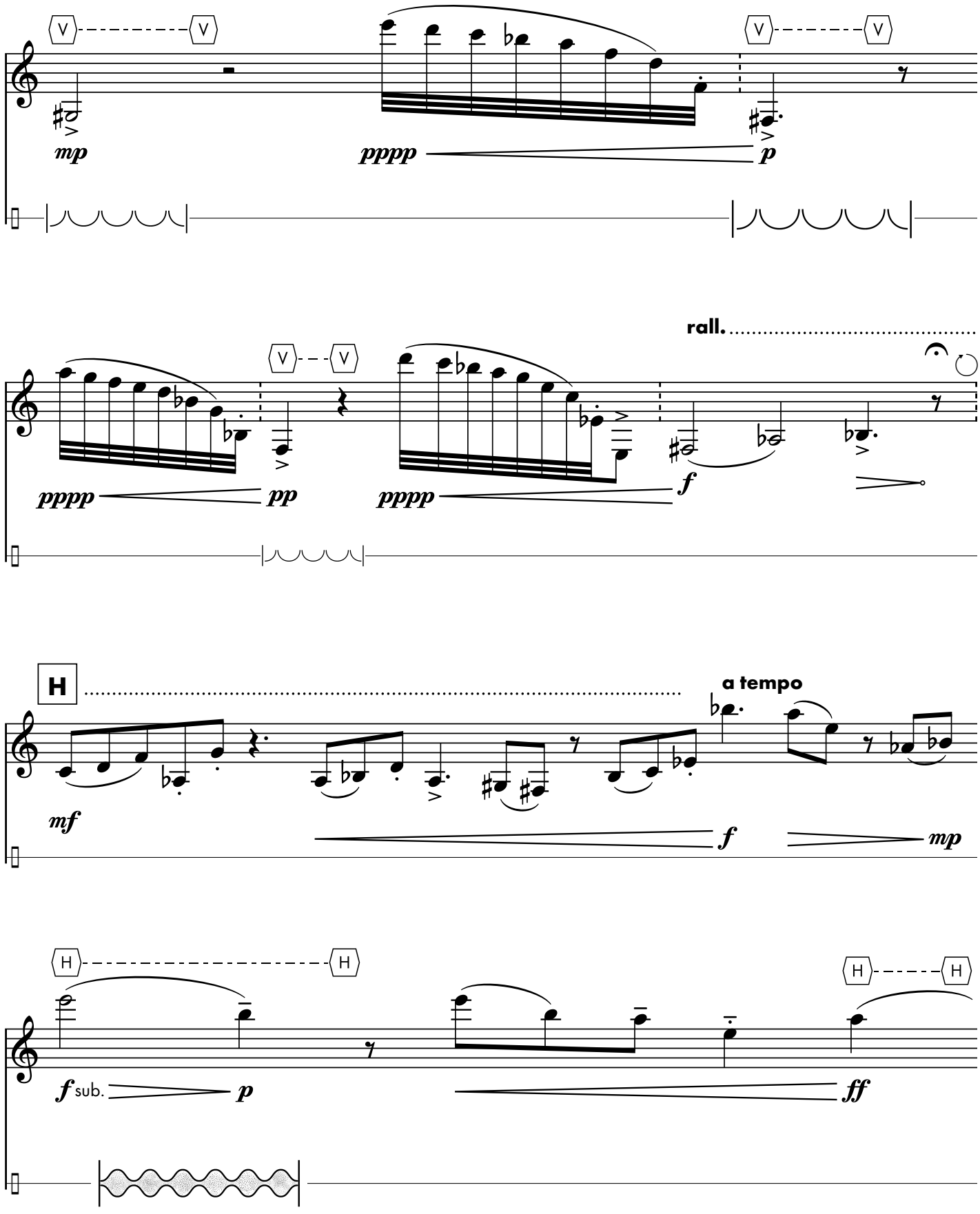
a tempo
ppp
pp
p
mp


V
V
V
V
mf
pppp
mp
pppp


ppp
p
mf
pp


F
accel.
V
V
mp
mf
f
p sub.
f
ff sub.
p
f sub.
a tempo
mf
p
pp
ppp
G
pppp


V
V
mp
pppp
p
rall.
pppp
pp
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f
H
a tempo
mf
f
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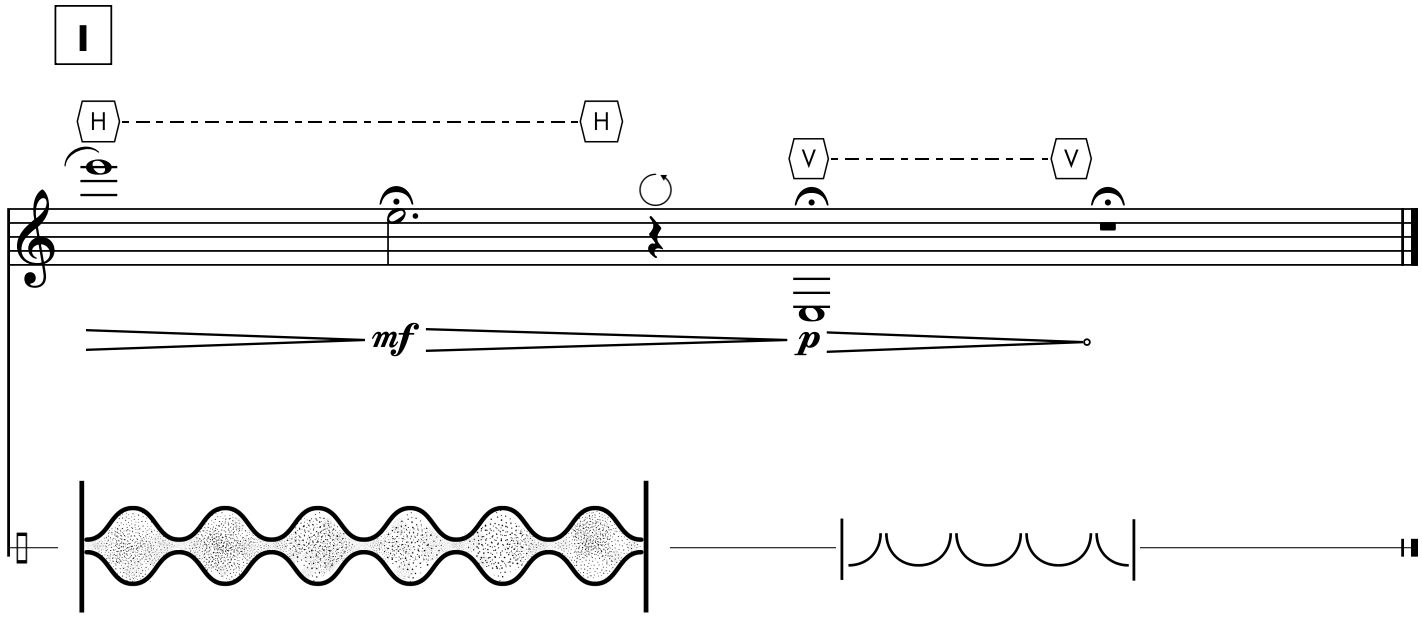
I
H
H
V
V
mf
p