Toward a historically faithful performance of the piano works of Antonín Qweřtý

William Gunther
Google, Inc.
wgunther@google.com

Brian Kell
Google, Inc.
bkell@google.com

SIGBOVIK '18
Carnegie Mellon University
April −2, 2018

Concrete

The great Czech composer Antonín Dvořák (1841–1904) wrote many pieces for the piano, including the famous *Humoresque No. 7 in G-flat Major* [2]. Unfortunately, typical performances of these works today sound nothing like what the composer intended because most modern pianos are configured with a different keyboard layout. Through painstaking historical research, we have reconstructed the original Dvořák piano keyboard layout. We have applied this discovery by transposing the *Humoresque* so that it is playable on a modern piano, enabling the first historically faithful performance of this piece in over a century.

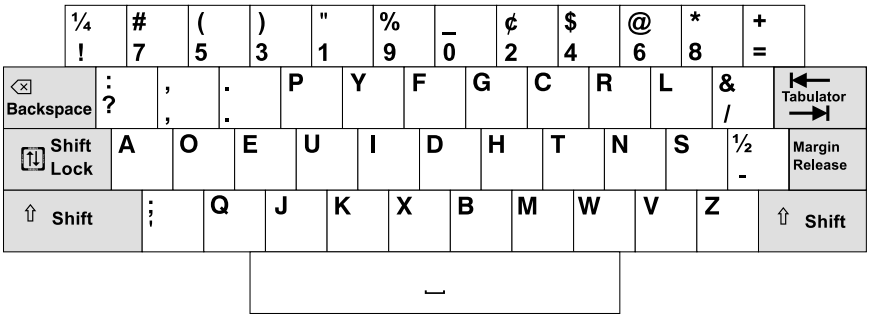


Figure 1: A Dvorak keyboard with the original or "classic" layout [3]. There are several variants of the Dvorak layout, but Dvořák was a classical composer, so this is almost certainly the one he used. Furthermore, this layout has 44 white keys (not counting the spacebar, which is clearly used only for rests). That is exactly half of the number of keys on a piano. Thus we may confidently conclude that the left half of Dvořák's piano layout was just these 44 keys, while the right half was the same keys again with the Shift key held down.

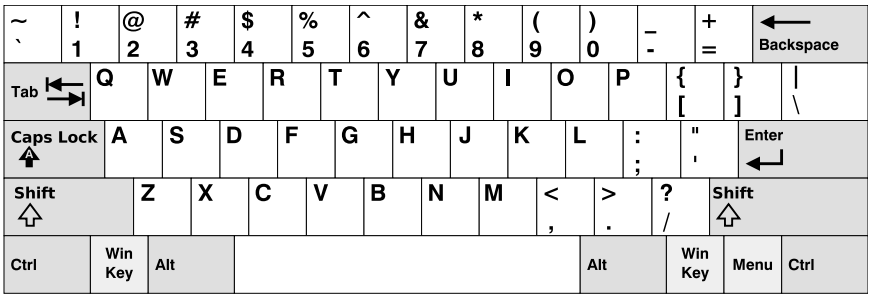


Figure 2: A modern QWERTY keyboard with the United States layout [4]. This layout has 47 white keys (not counting the spacebar), but obviously three of them are useless: nobody really needs the characters `‘~]}\|` [1]. This leaves 44 keys in the same positions as the keys of the Dvorak keyboard, which can then be mapped to the piano in the same way.

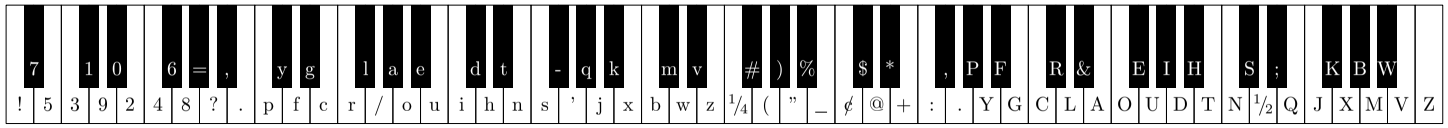


Figure 3: The reconstructed Dvořák keyboard layout. Although it looks strange to modern eyes, this keyboard would have looked familiar to Antonín Dvořák in 1894 and is unquestionably the layout for which he composed the *Humoresques* and his other piano works.

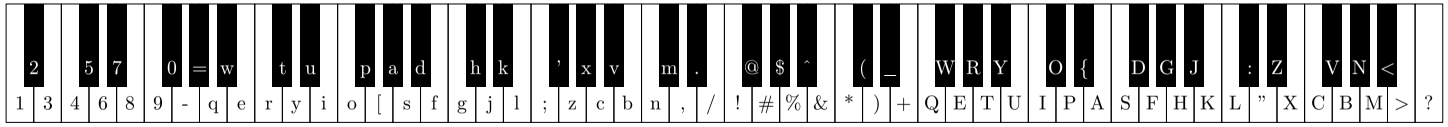
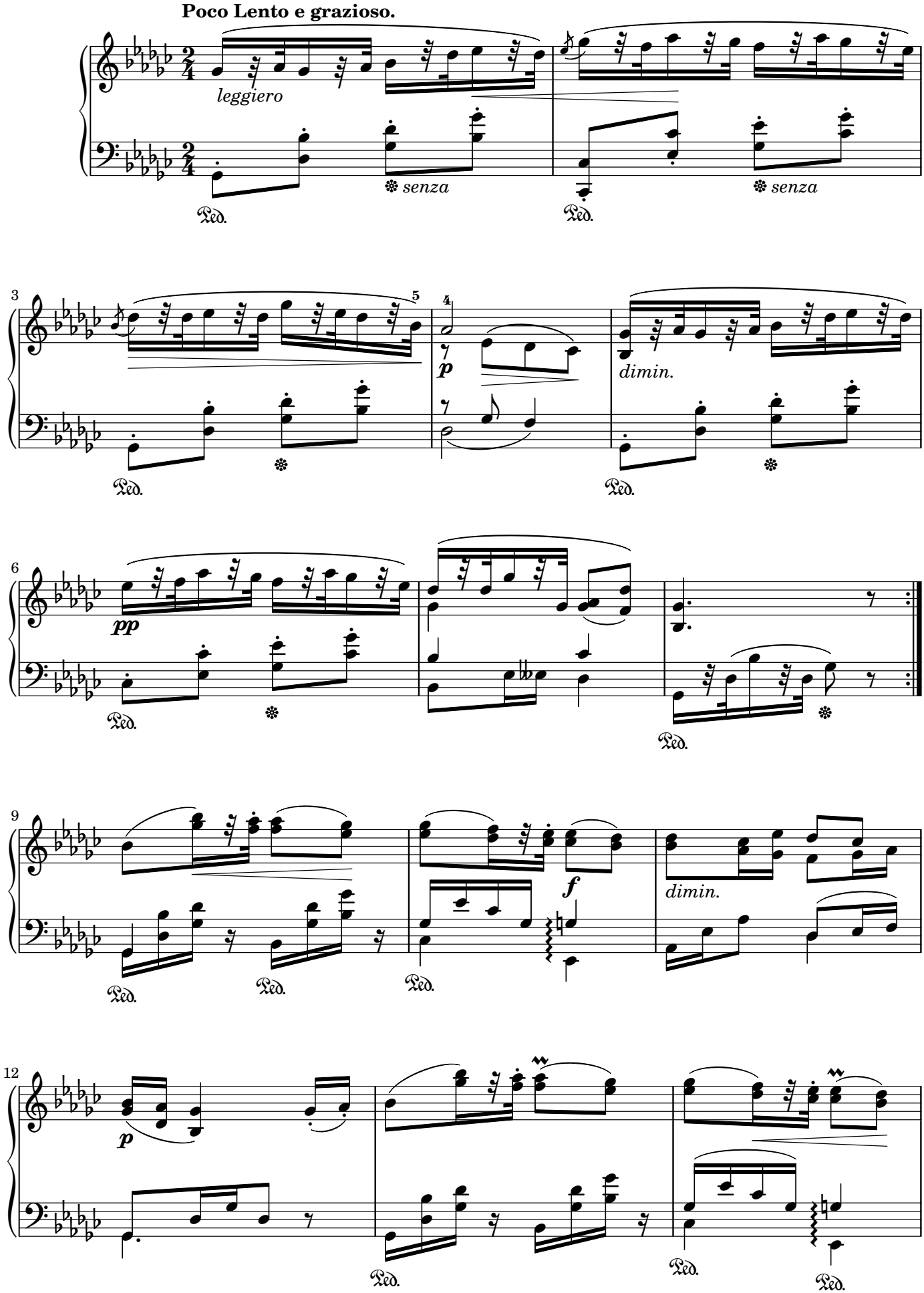


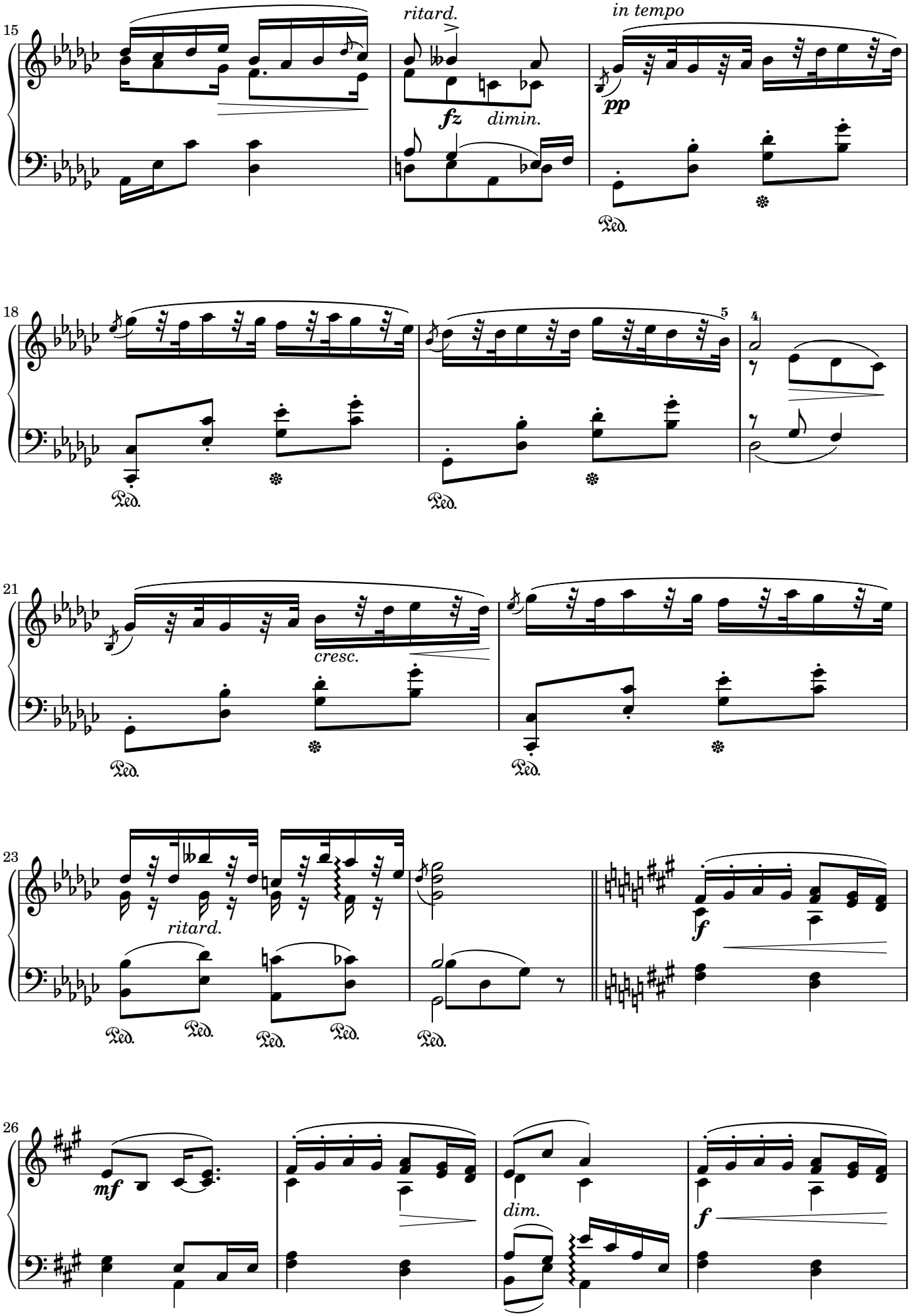
Figure 4: The familiar Qweřtý keyboard layout, used by most modern pianos. The mapping from keys of the Dvořák keyboard to those of the Qweřtý keyboard is in most cases obvious. The main difficulty lies in the keys $¼$, $¢$, and $½$ on the Dvořák keyboard, which do not appear on the Qweřtý keyboard. While a modern Qweřtý piano cannot reproduce the note $¼$ exactly, we can come close by playing 1, /, and 4 simultaneously. Likewise, we can approximate $¢$ and $½$ with the chords $\{c, /\}$ and $\{1, /, 2\}$, respectively.

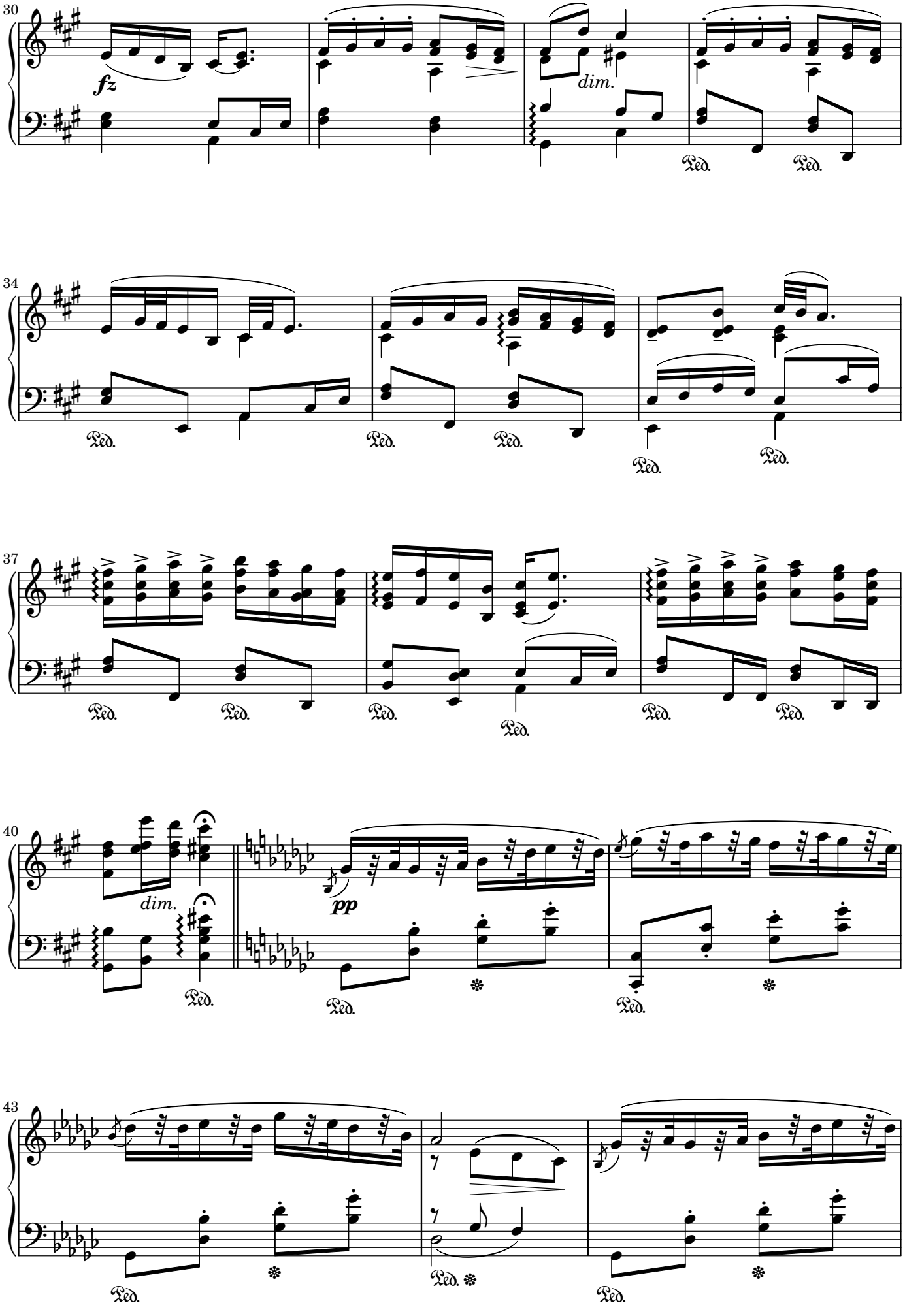
Humoresque No. 7 in G-flat Major

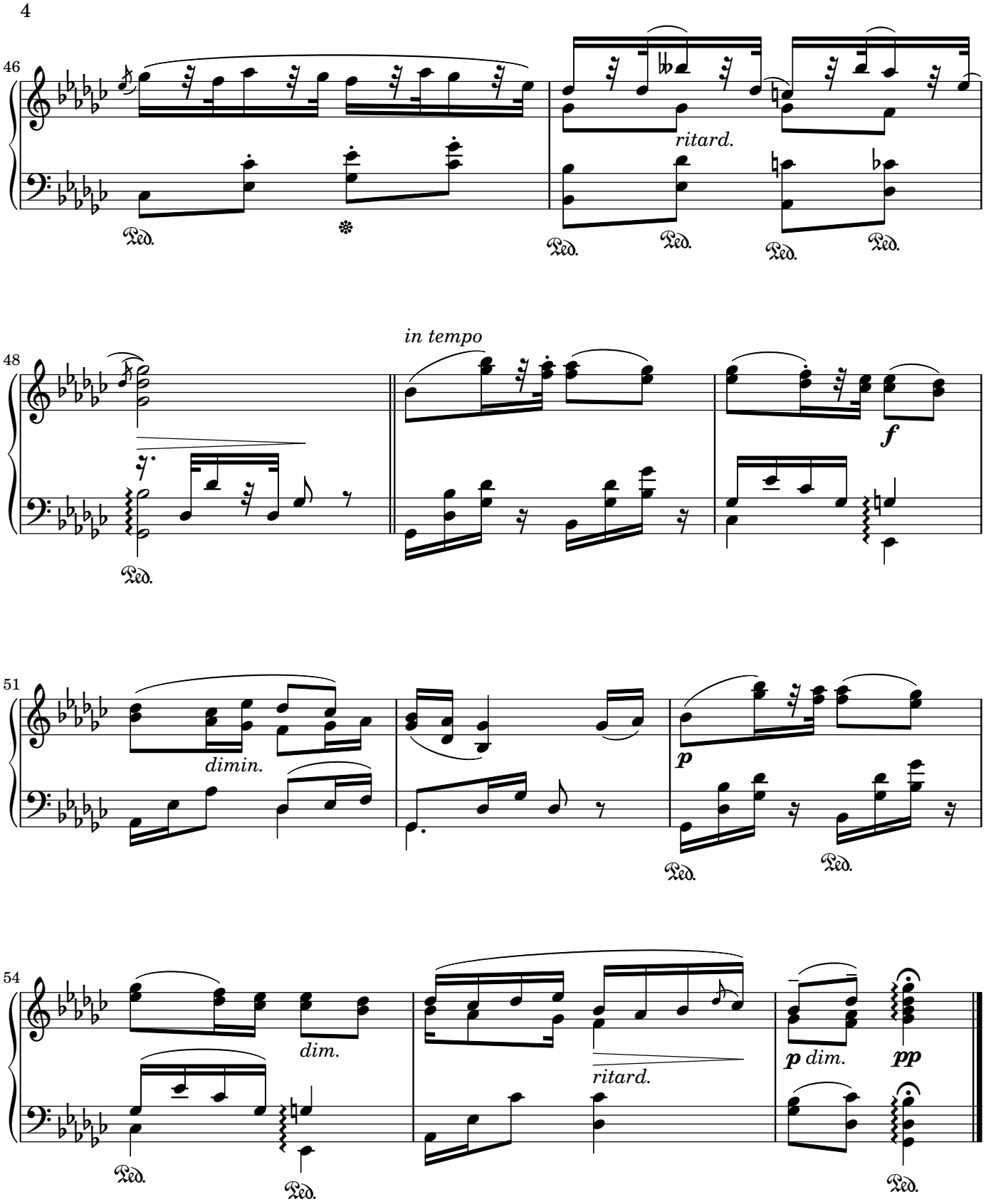
Antonín Dvořák

Poco Lento e grazioso.



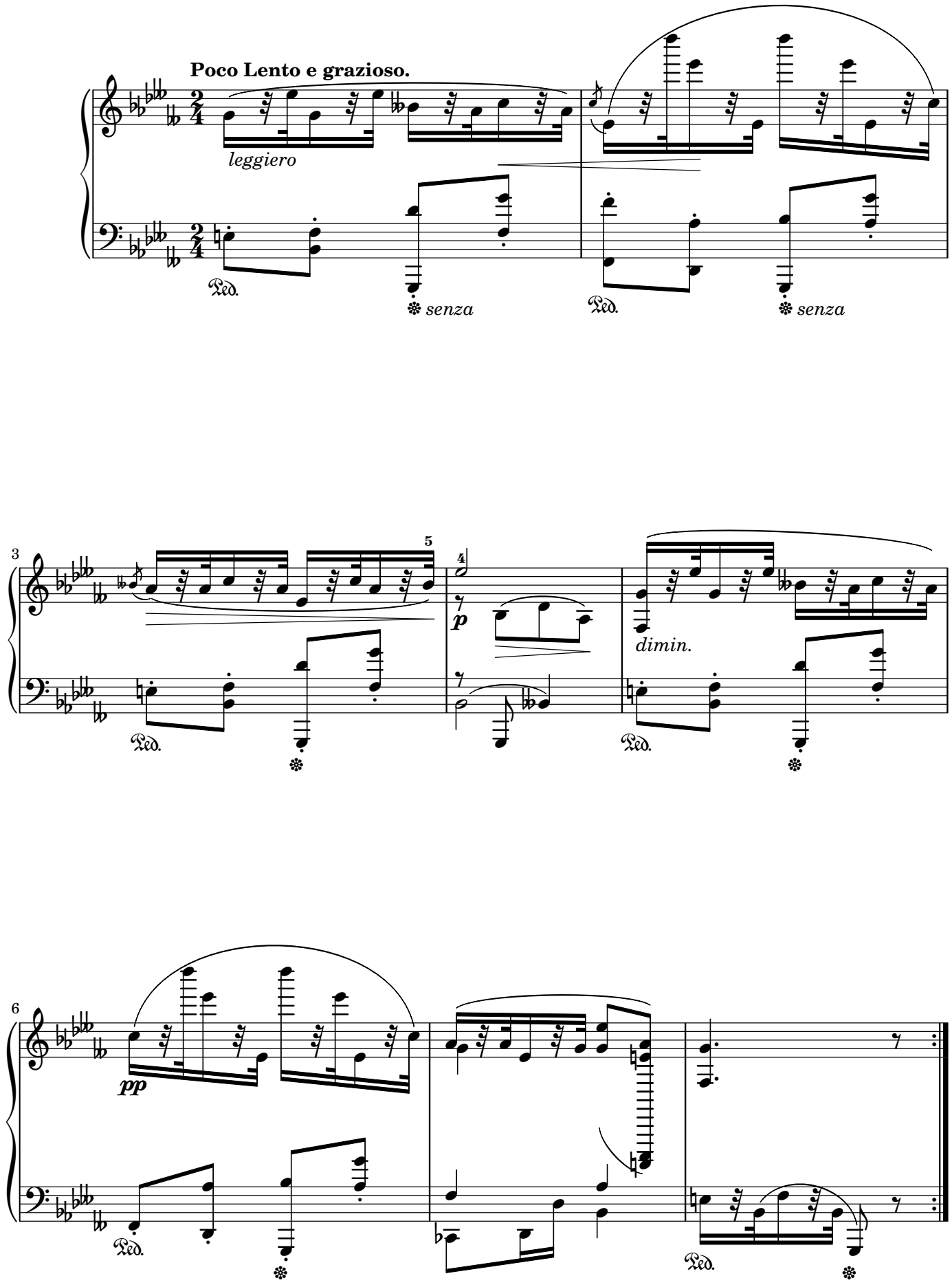

15
ritard.
fz
dimin.
in tempo
pp
Ped.
18
5
4
Ped.
21
cresc.
Ped.
23
ritard.
Ped.
f
26
mf
dim.
f

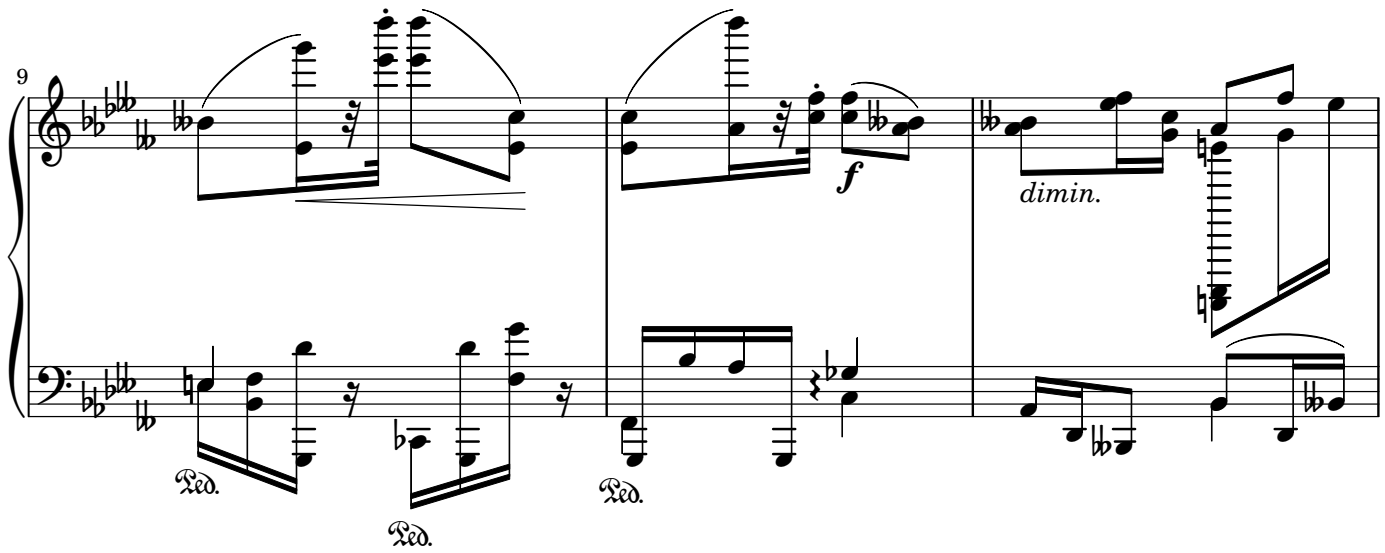

30
fz
dim.
Ped.
34
37
40
dim.
pp
43

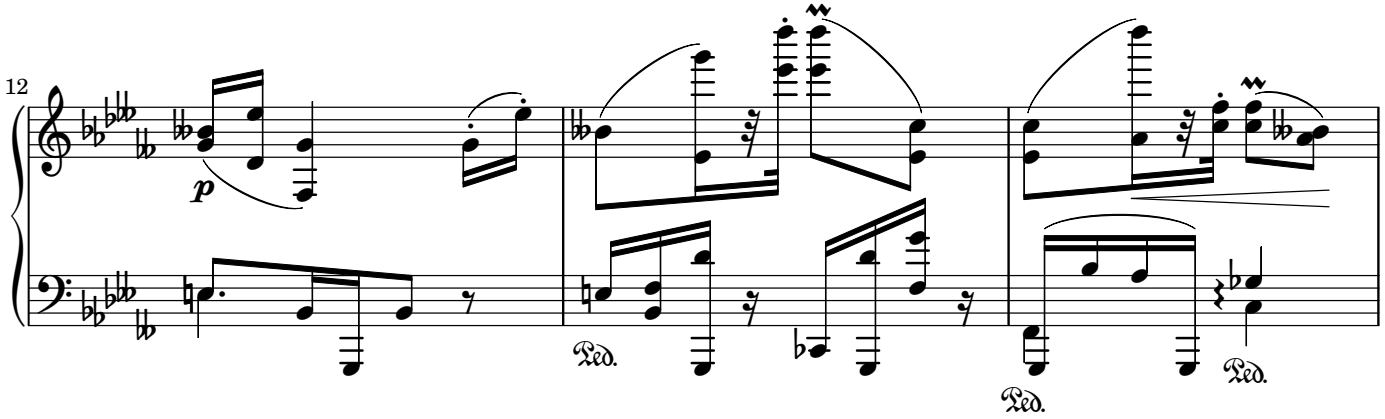

46
ritard.
Ped.
48
in tempo
f
51
dimin.
p
54
dim.
ritard.
p dim.
pp

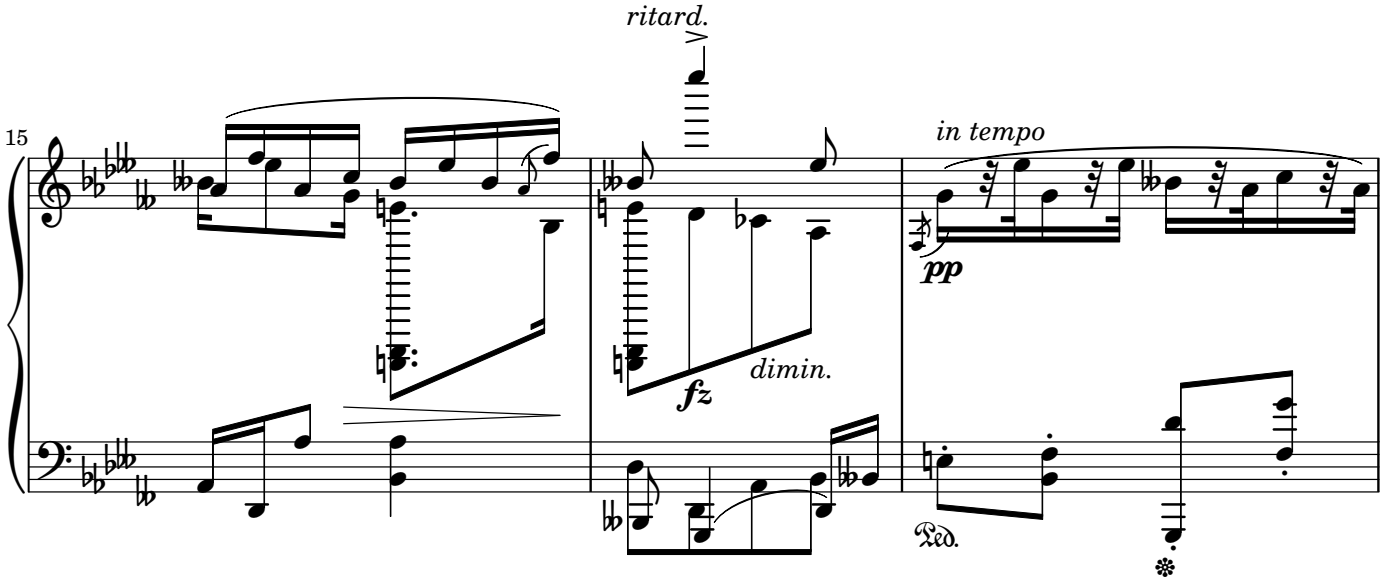
Jfmsod;xfd No. 2 in A-flat Harmonic Major ♭6 ♭5

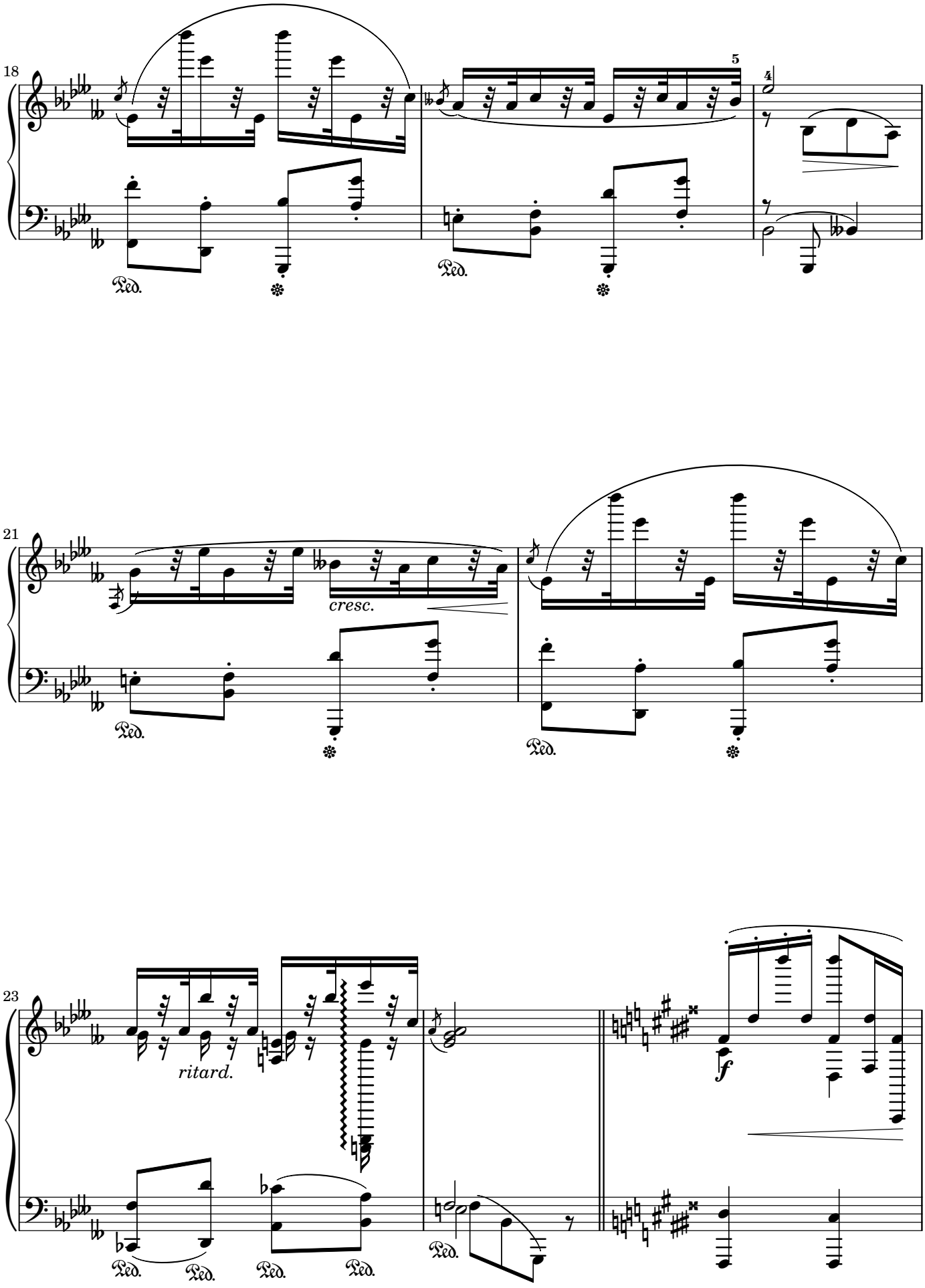
Antonín Qweřtý

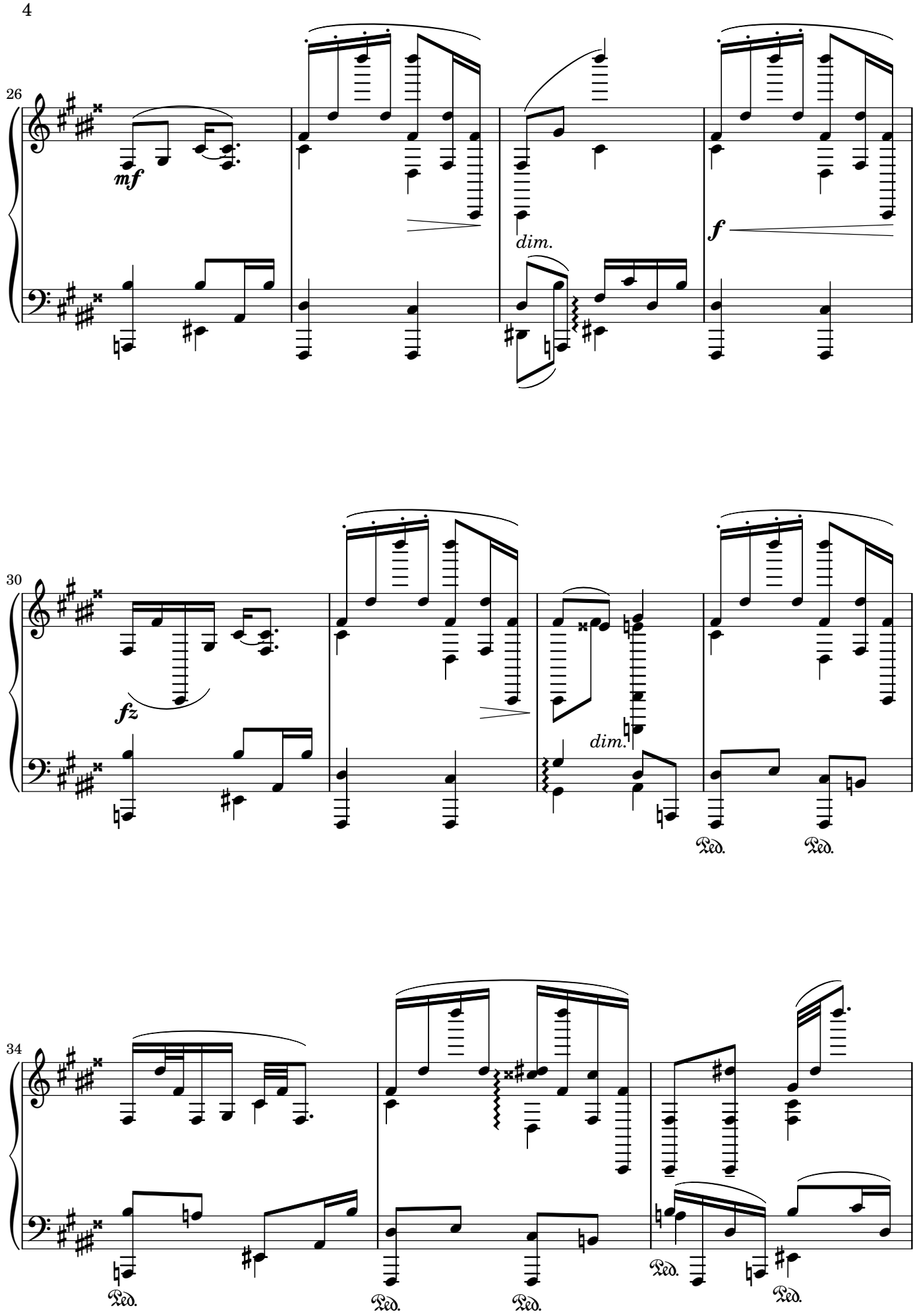


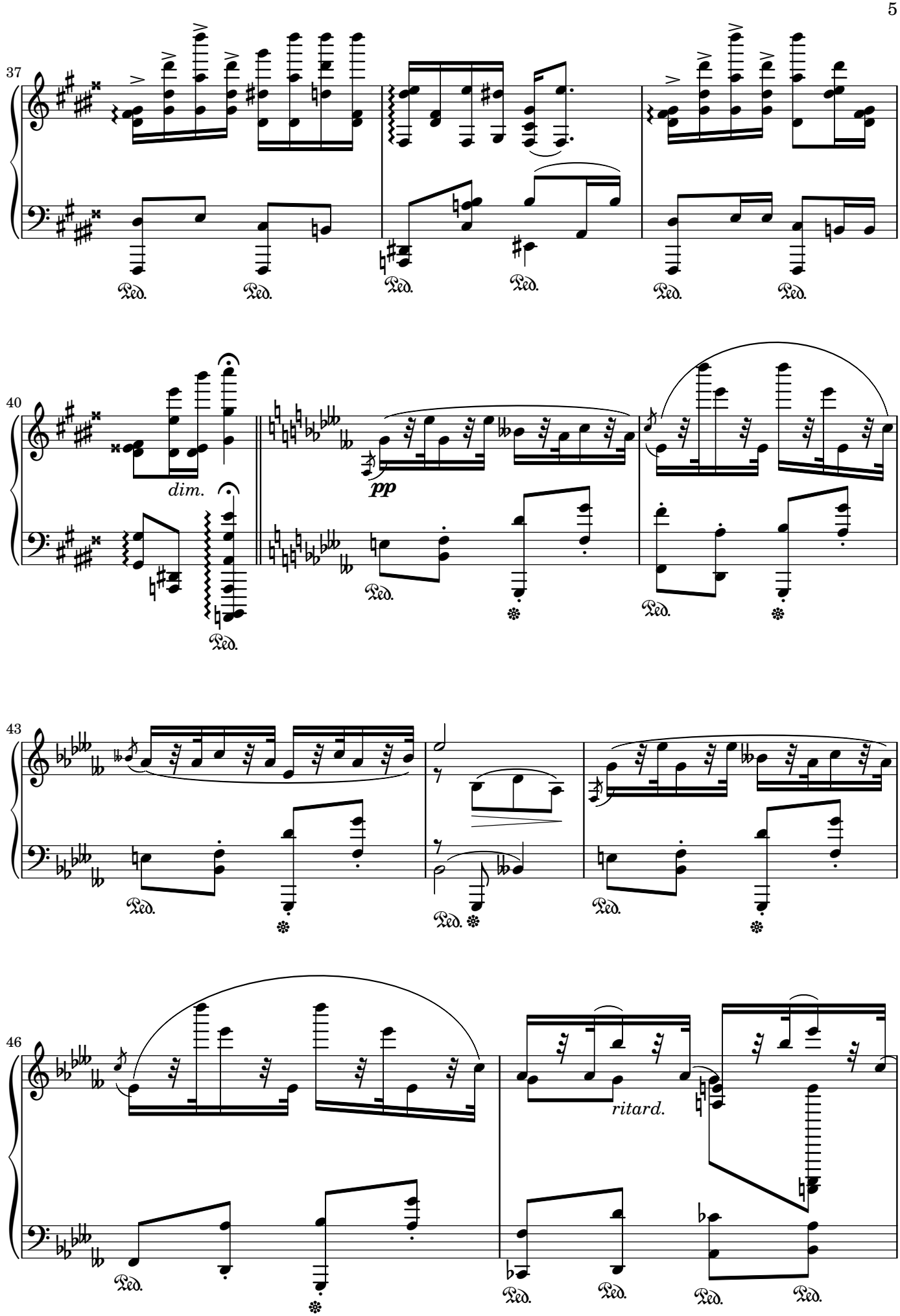

9
f
dimin.
Ped.
Ped.
Ped.

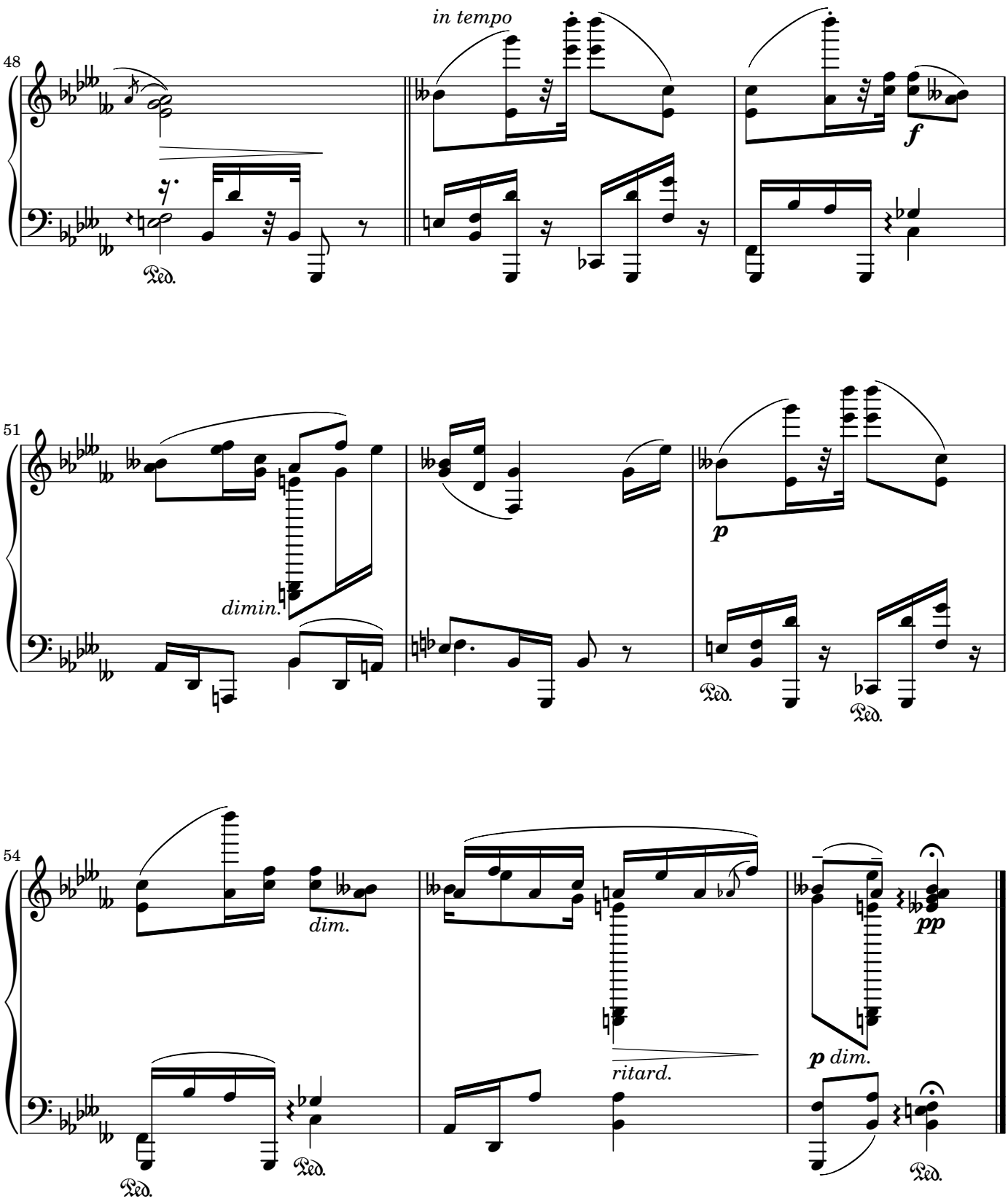

12
p
Ped.
Ped.
Ped.


15
ritard.
fz
dimin.
in tempo
pp
Ped.


18
5
4
Ped.
Ped.
21
cresc.
Ped.
Ped.
23
ritard.
f
Ped.
Ped.
Ped.
Ped.
Ped.


26
mf
dim.
f
30
fz
dim.
Ped.
Ped.
34
Ped.
Ped.
Ped.
Ped.
Ped.


37
Ped.
40
dim.
pp
43
46
ritard.


48
in tempo
f
Ped.
51
dimin.
p
Ped.
Ped.
54
dim.
ritard.
pp
p dim.
Ped.
Ped.
Ped.

References

[1] Bringhurst, Robert. *The Elements of Typographic Style*, version 3.1. Hartley & Marks, 2005. For example, Bringhurst dismisses the tilde key: "In the eyes of ISO and Unicode, the swung dash found on computer keyboards is an *ascii tilde*—a character ... meaningless to typographers." He describes the backslash as "an unsolicited gift of the computer keyboard" with "no accepted function in typography." And of the pipe character, he writes, "Despite ... its presence on the standard ASCII keyboard, the pipe has no function in typography. This is another key, and another slot in the font, that begs to be reassigned to something typographically useful."

[2] Dvořák, Antonín. *Humoresque No. 7 in G-flat Major*, Op. 101, S. 123. N. Simrock, London, 1894. Reprinted in *Humoresques & Other Works for Solo Piano*, Dover Publications, 1994.

[3] Optikos at English Wikipedia. *File:KB DSKtypewriter.svg*. February 10, 2010. https://commons.wikimedia.org/wiki/File:KB_DSKtypewriter.svg. Licensed under the Creative Commons Attribution-Share Alike 3.0 Unported license and the GNU Free Documentation License.

[4] Wikimedia Commons contributors (Denelson83, Bodigami, Bencherlite, and Yes0song). *File:KB United States.svg*. December 27, 2010. https://commons.wikimedia.org/wiki/File:KB_United_States.svg. Licensed under the GNU Free Documentation License and the Creative Commons Attribution-Share Alike 3.0 Unported license.

Thanks to William Lovas for his piano performance during our presentation at the SIGBOVIK conference.