INSTRUMENTAÇÃO: CORDAS

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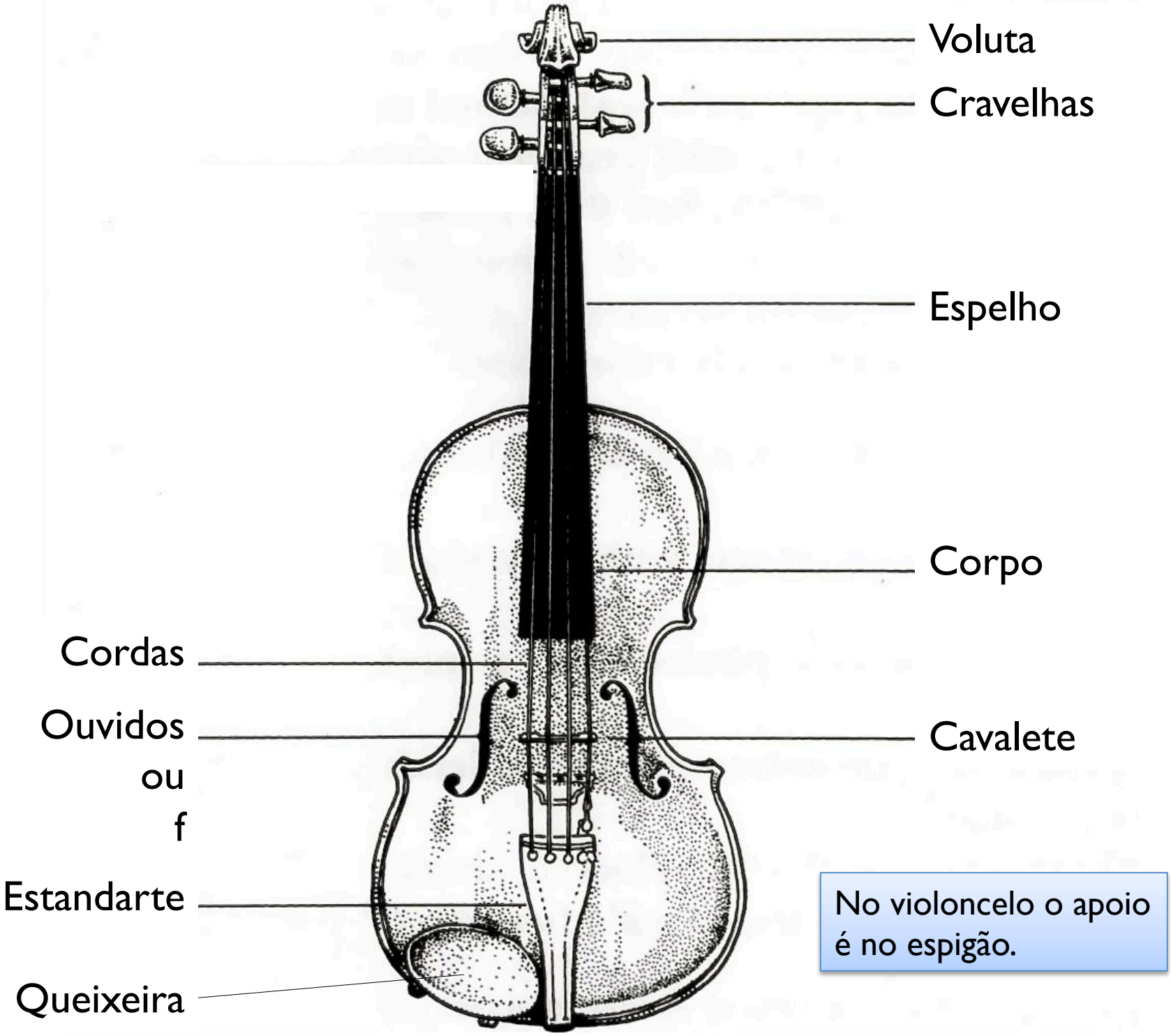
A FAMÍLIA DAS CORDAS

Violino Viola Violoncelo Contrabaixo

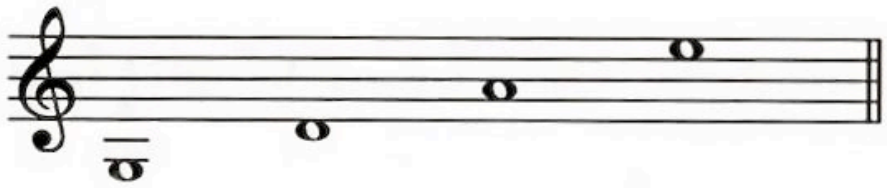
Características gerais

- Possui uma enorme extensão abrangendo sete oitavas entre os contrabaixos e violinos;
- Possui timbre homogêneo em toda sua extensão com apenas poucas variações em registros diferentes;
- Faixa dinâmica bem equilibrada permitindo *pianissimos* e *fortissimos* efetivos;
- Sonoridade versátil: produz diferentes tipos de sons (com arco, pizzicato, efeitos) além de executar, sem maiores problemas, passagens rápidas, notas longas, trinados, notas duplas;

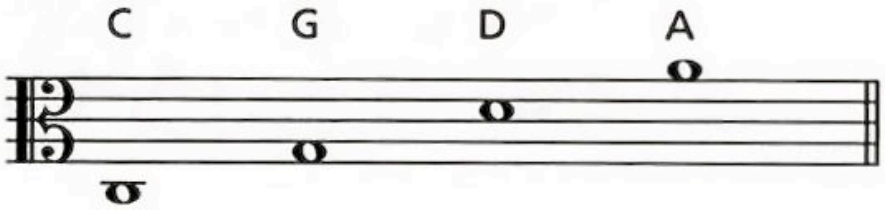


No violoncelo o apoio é no espigão.

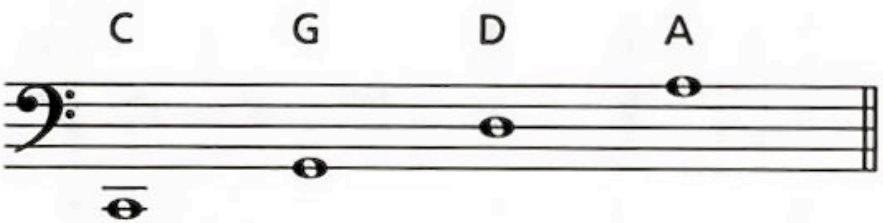
Nomenclatura do Violino



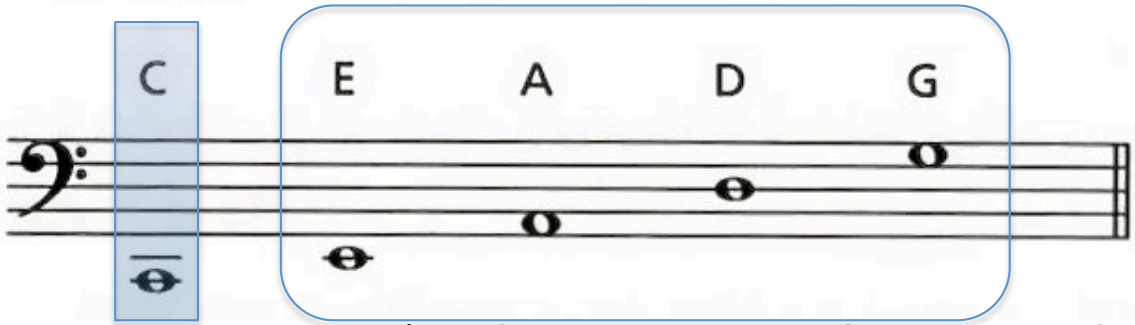
Violino



Viola



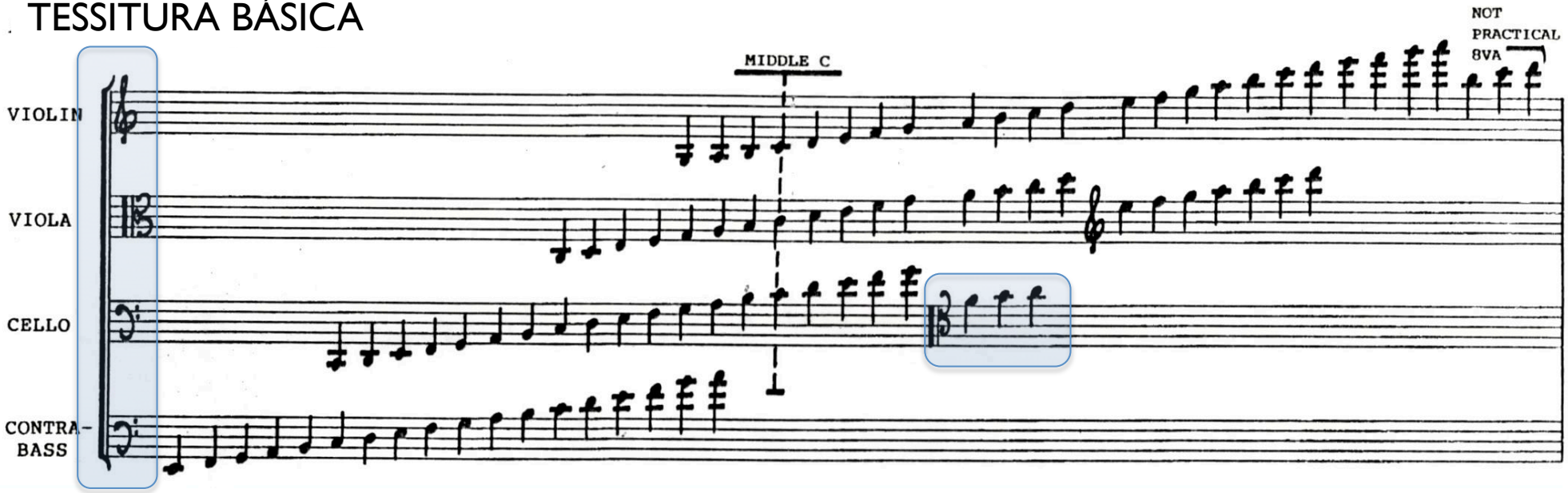
Violoncelo



Contrabaixo

(nos baixos especiais de cinco cordas acrescenta-se a corda Dó)

TESSITURA BÁSICA



DISTRIBUIÇÃO E EQUILÍBRIO DAS CORDAS

GRANDE ORQUESTRA

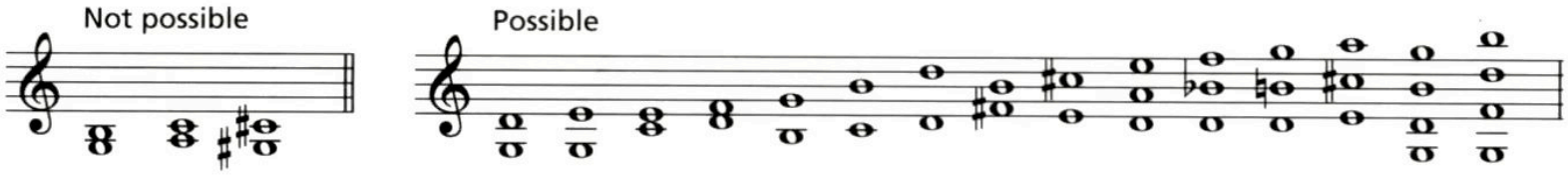
Primeiros violinos	16 a 18 músicos	8 ou 9 estantes
Segundos violinos	14 a 16 músicos	7 ou 8 estantes
Violas	10 a 12 músicos	5 ou 6 estantes
Cellos	10 a 12 músicos	5 ou 6 estantes
Contrabaixos	8 a 10 músicos	4 ou 5 estantes

OUTRAS CONFIGURAÇÕES EQUILIBRADAS

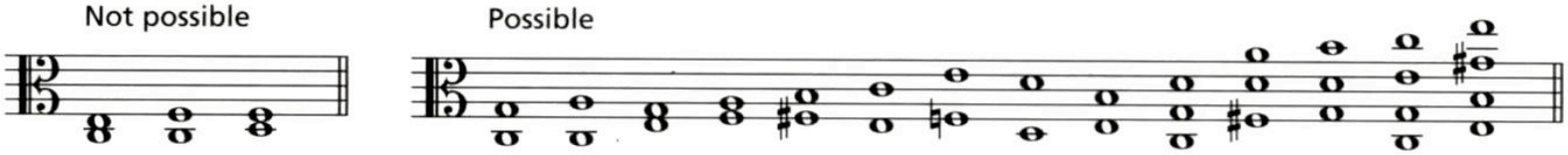
6 violinos	9 violinos	12 violinos	18 violinos
2 violas	3 violas	4 violas	6 violas
2 celli	3 celli	4 celli	6 celli

CORDAS DUPLAS, TRIPLAS E QUÁDRUPLAS

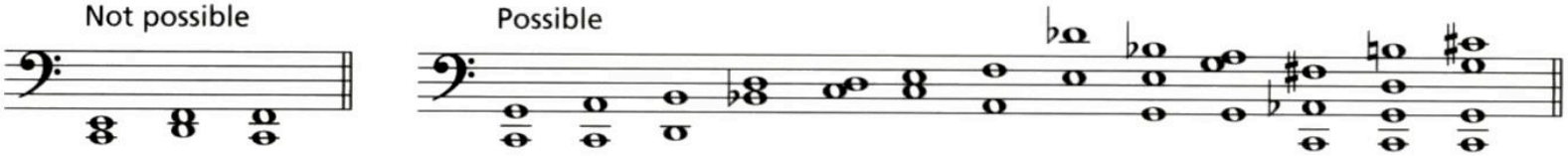
EXAMPLE 2-7. Violin



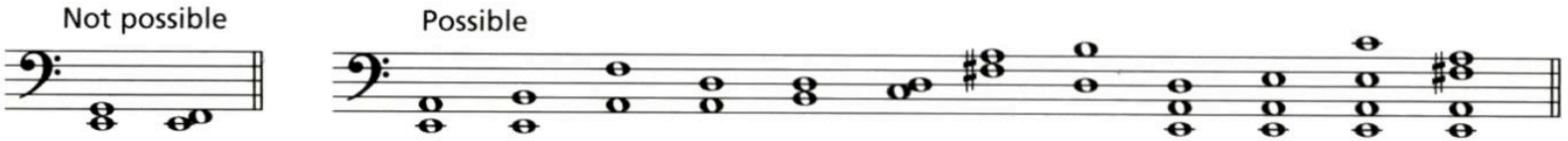
EXAMPLE 2-8. Viola



EXAMPLE 2-9. Cello

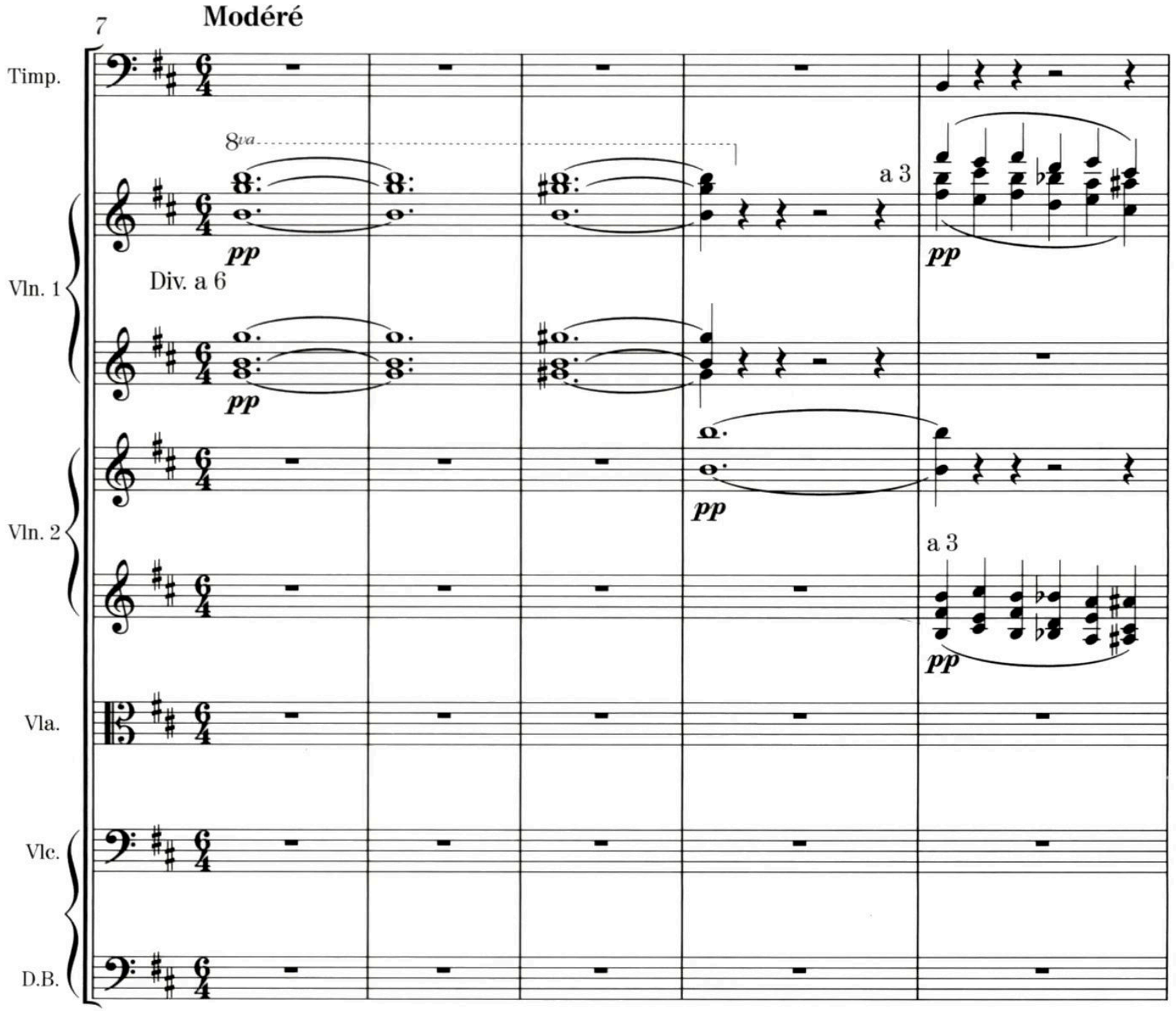


EXAMPLE 2-10. Double bass: Only double stops that include an open string are practical.



Confira as tabelas específicas para cada instrumento disponibilizadas no blog.

EXAMPLE 2-11. Debussy, *Nocturnes*, "Nuages," mm. 7–15 (strings only)



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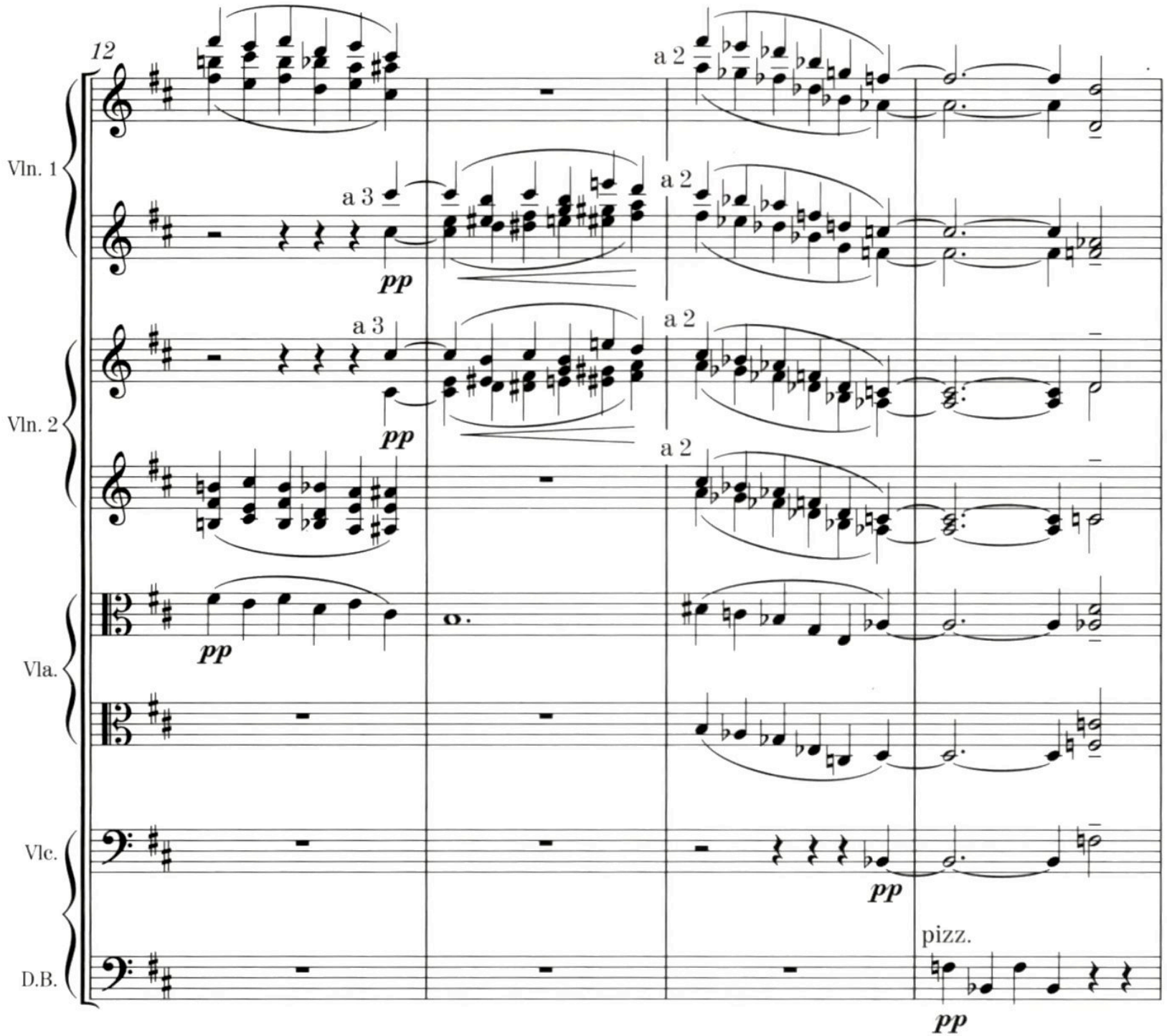
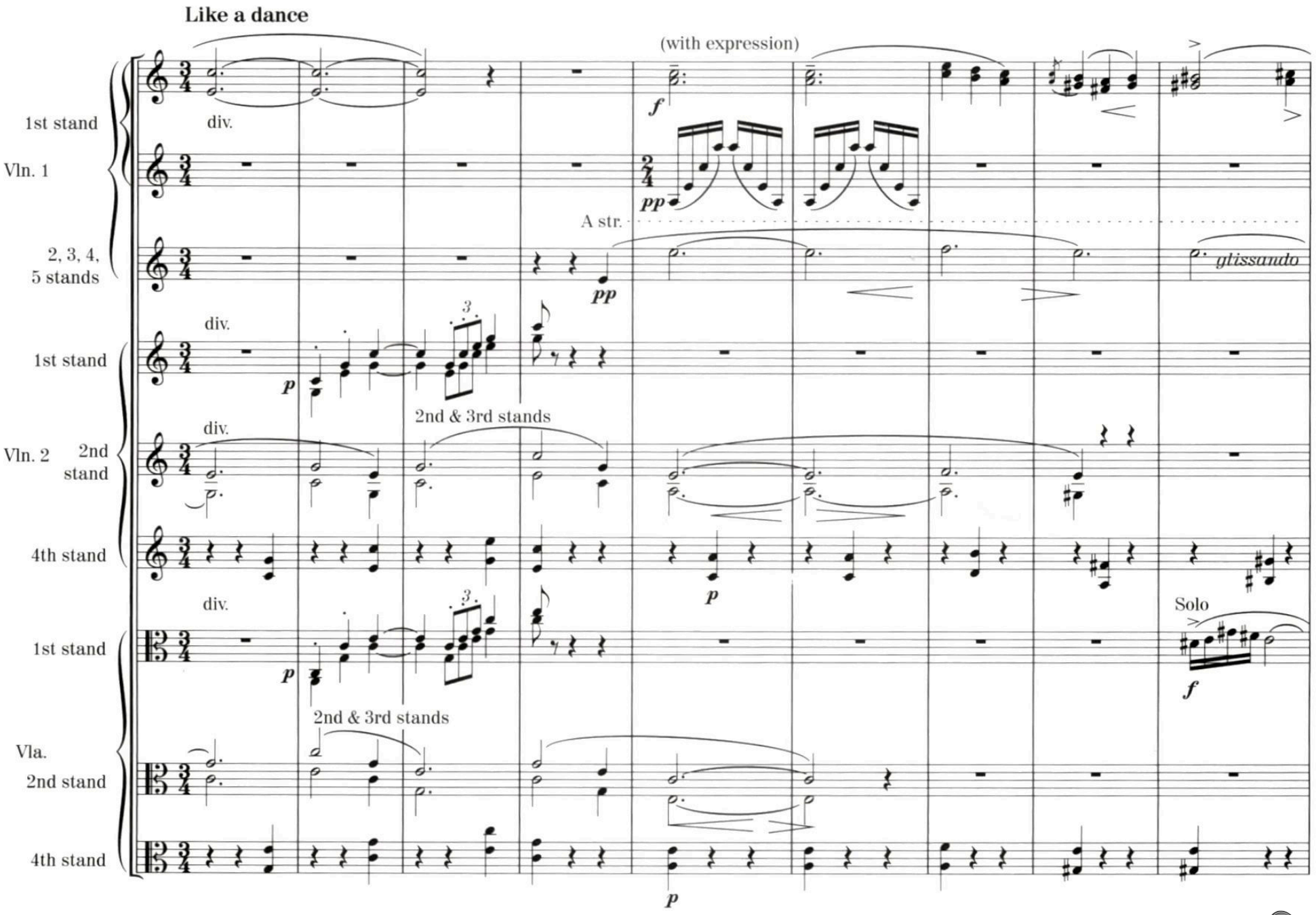
DIVISI


12
Vln. 1
Vln. 2
Vla.
Vlc.
D.B.
a 3
a 2
pp
pizz.

EXAMPLE 2-13. R. Strauss, *Also sprach Zarathustra*, at 27



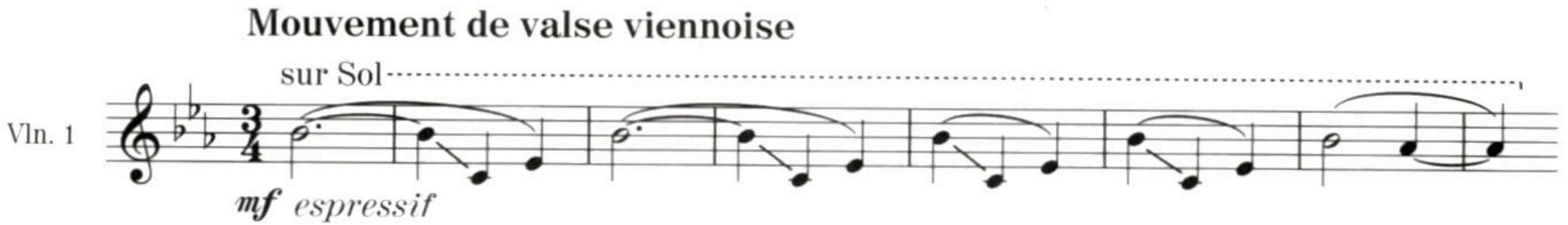
VIBRATO

A grande maioria dos músicos utilizam o *vibrato* automaticamente para realçar a sustentação das notas.

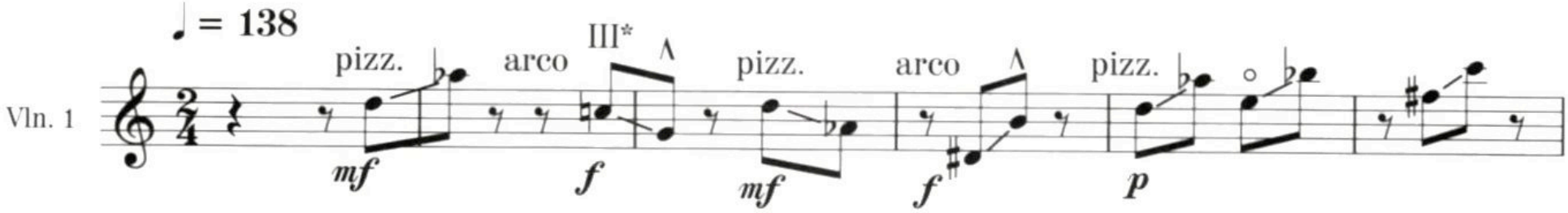
Quando o arranjador ou orquestrador não quer a utilização do *vibrato* deve-se escrever acima da passagem: *non vibrato* ou *senza vibrato*.

GLISSANDO E PORTAMENTO

EXAMPLE 2-14. Ravel, *La Valse*, at 30



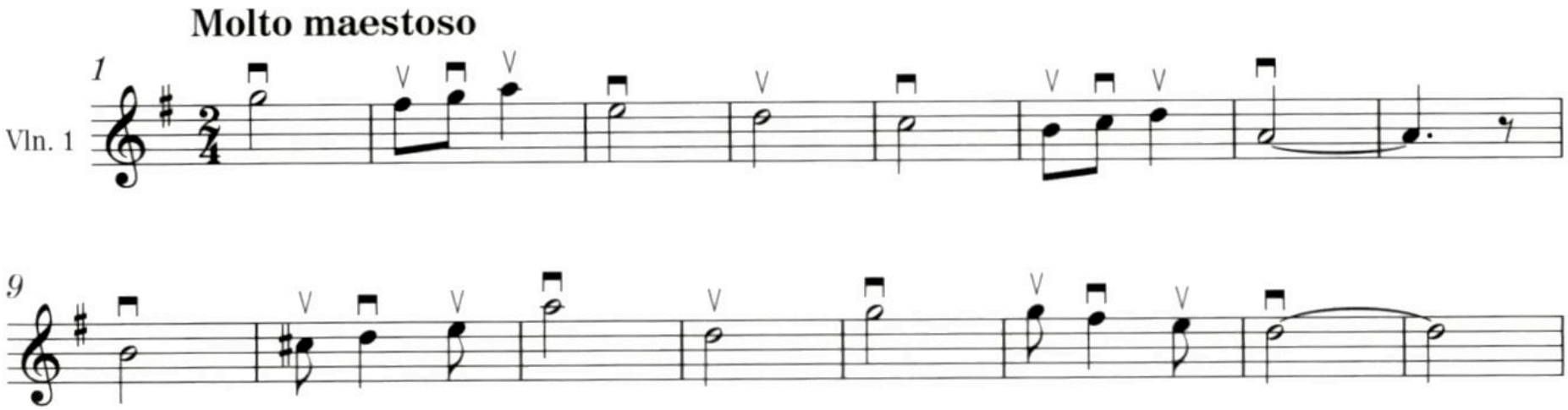
EXAMPLE 2-15. Bartók, *Music for Strings, Percussion and Celesta*, second movement, 1 m. before 170



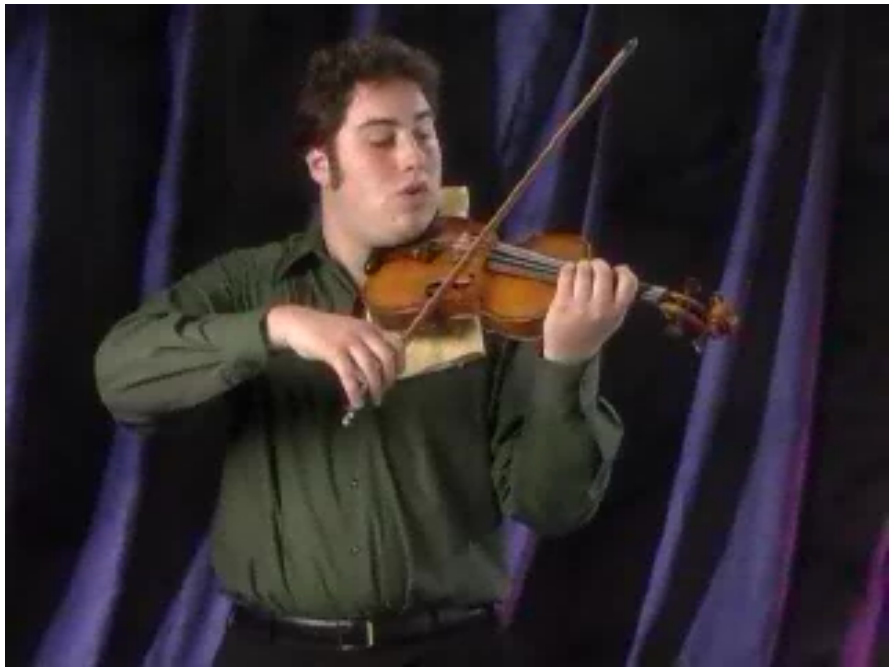
*to be played on the third, the D, string.

NON LEGATO

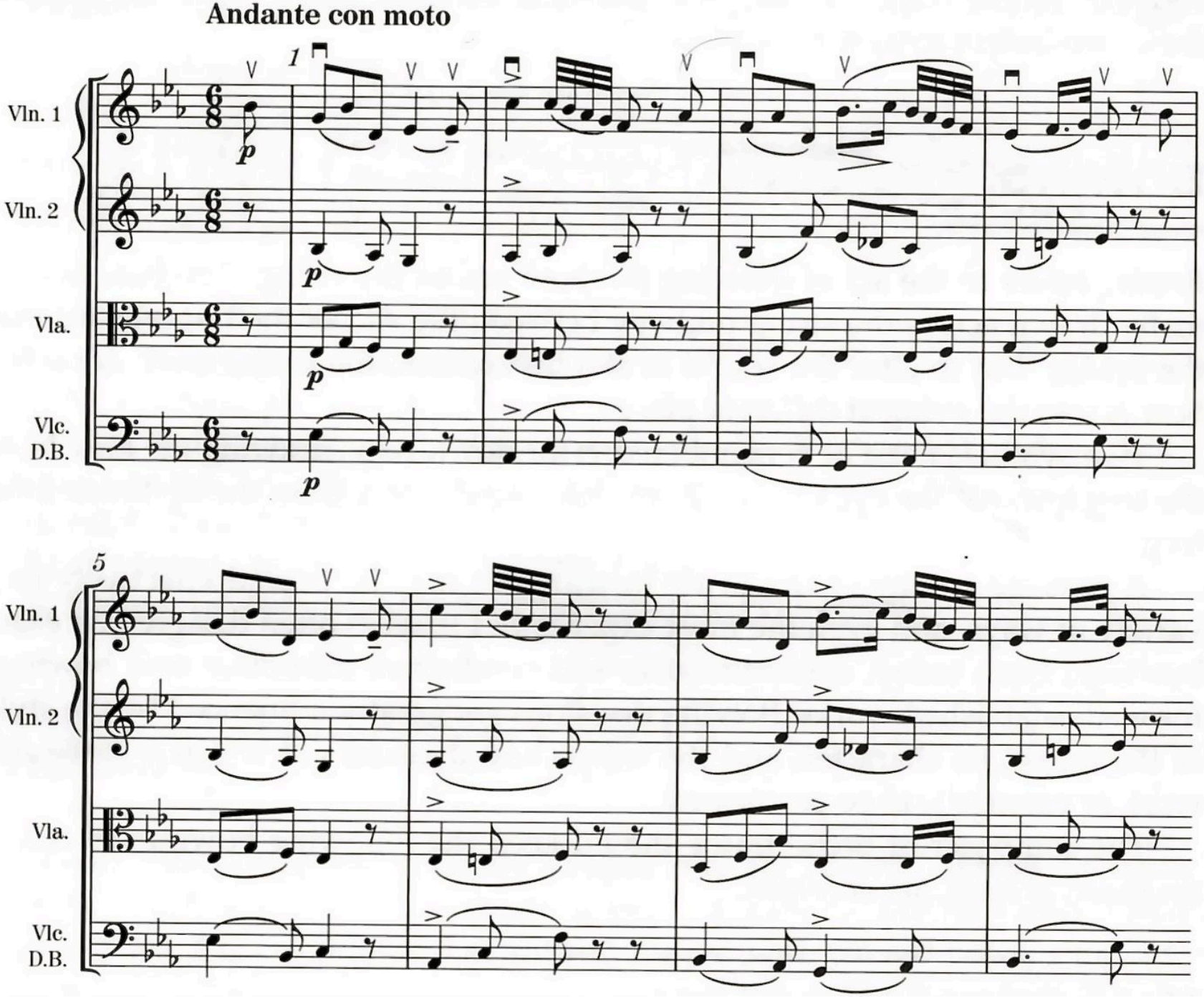
EXAMPLE 2-18. Elgar, *Pomp and Circumstance* No. 1, trio



LEGATO



EXAMPLE 2-19. Schubert, Symphony No. 5, second movement, mm. 1–8



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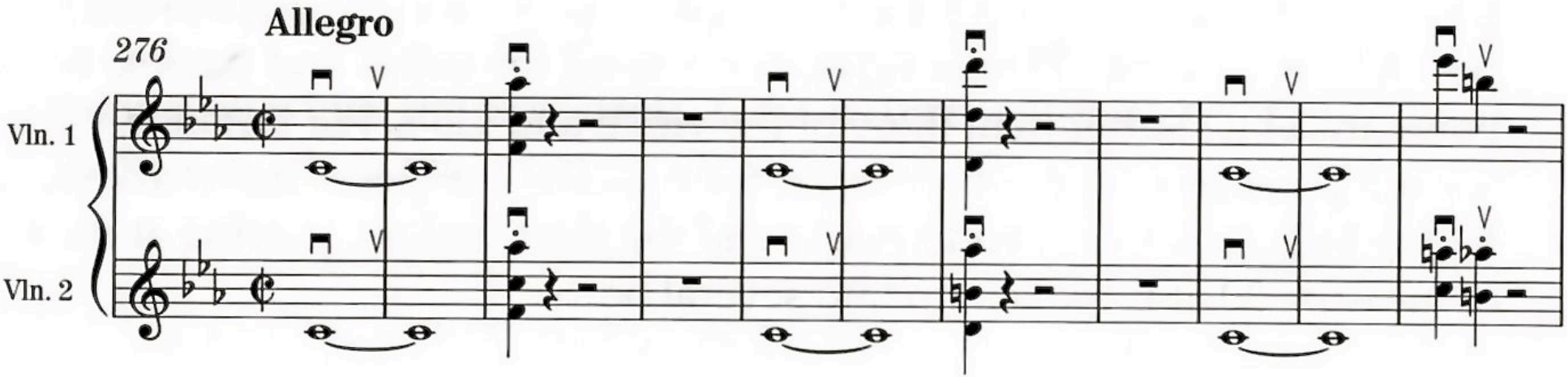
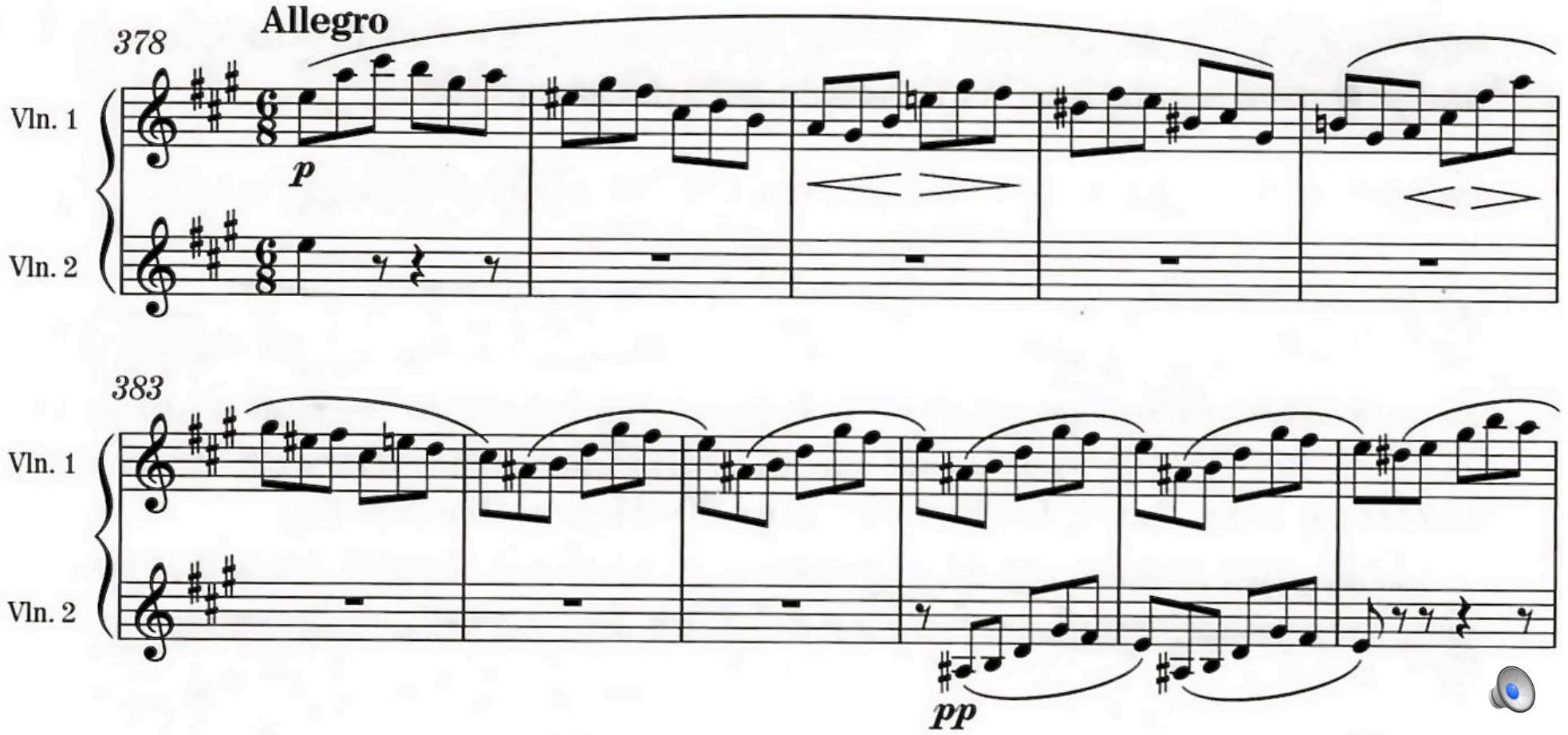
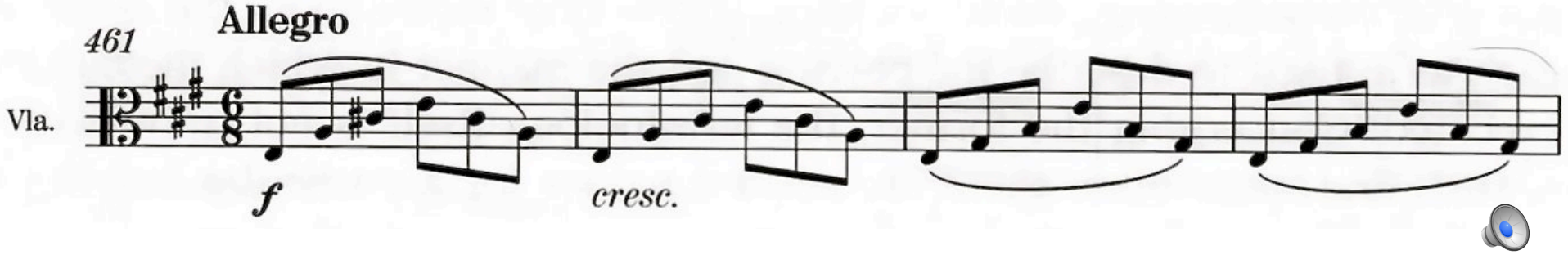
EXAMPLE 2-20. Beethoven, *Coriolanus* Overture, mm. 276–286



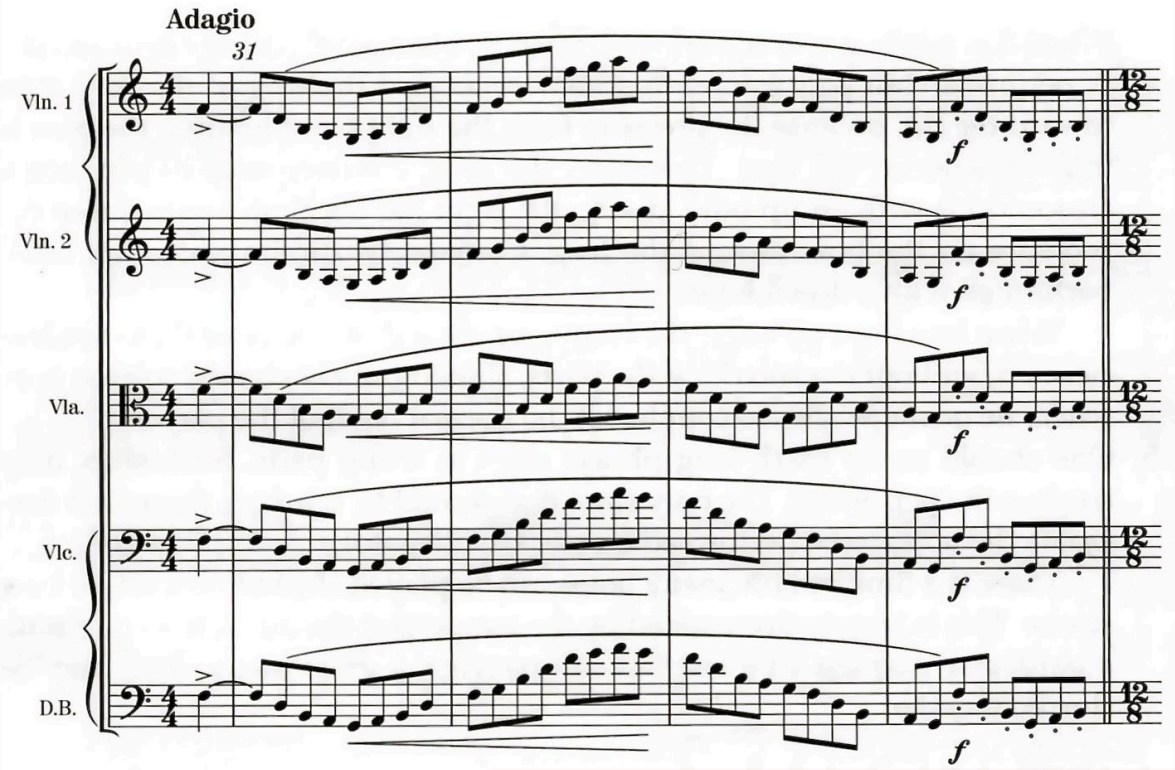
EXAMPLE 2-21. Mendelssohn, Symphony No. 4, first movement, mm. 378–388



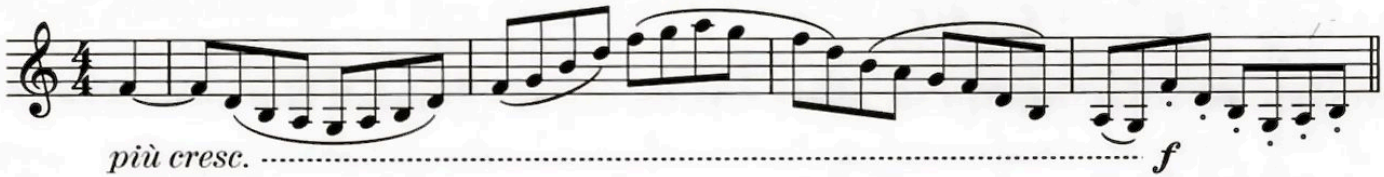
EXAMPLE 2-22. Mendelssohn, Symphony No. 4, first movement, mm. 461–464



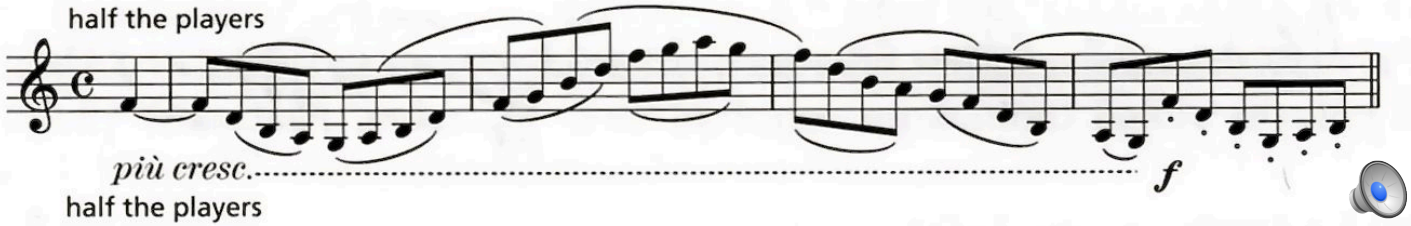
EXAMPLE 2-23. Liszt, *Les Preludes*, mm. 30–34



EXAMPLE 2-24. Liszt, *Les Preludes*, mm. 30–34, possible bowing

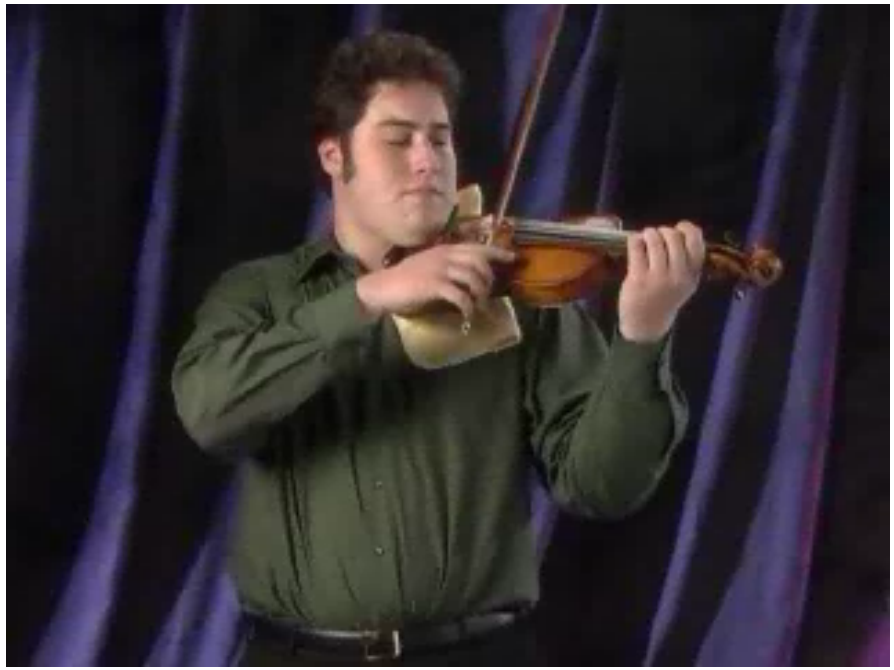


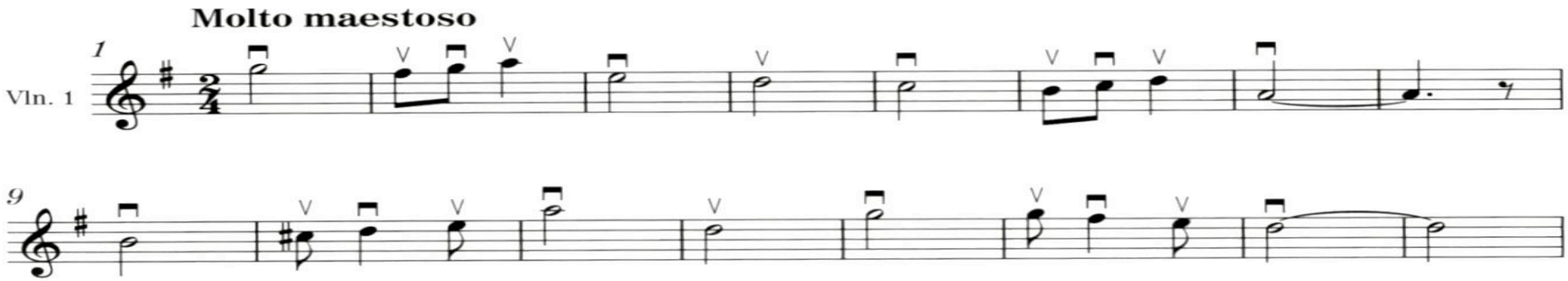
EXAMPLE 2-25. Liszt, *Les Preludes*, mm. 30–34, possible bowing



DÉTACHÉ

É uma arcada *non legato* tocada em todos os instrumentos de corda trocando a direção do arco a cada nota.





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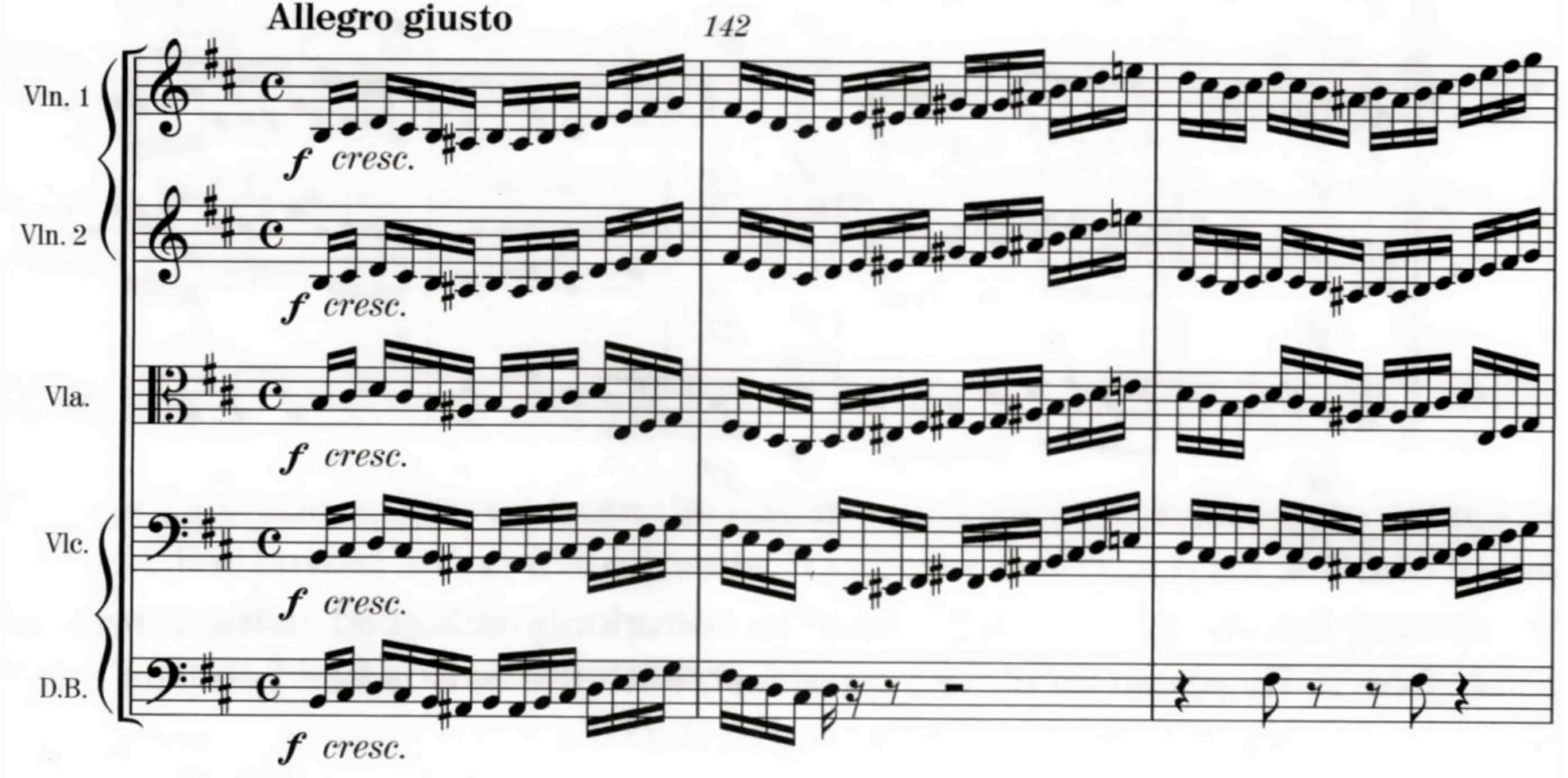
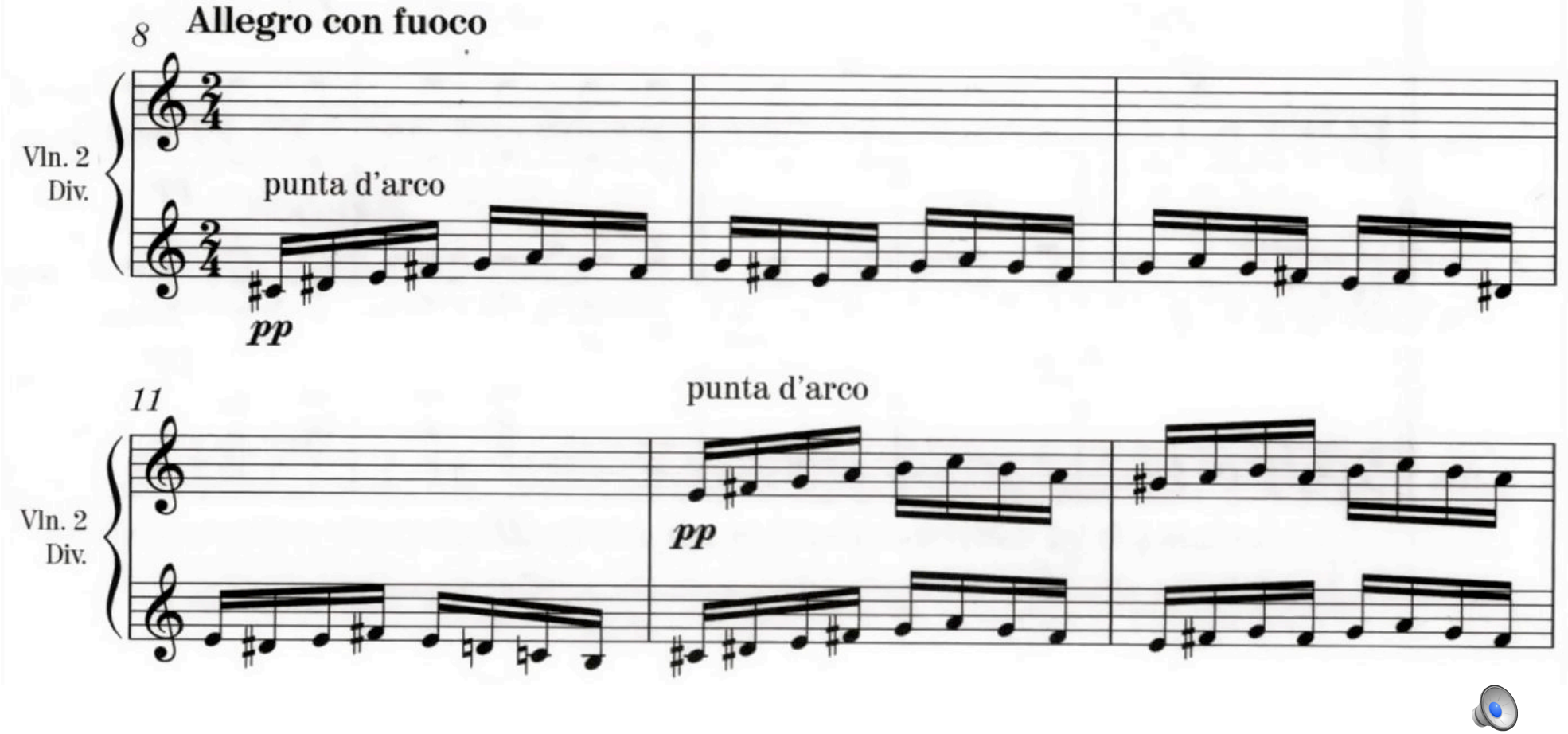
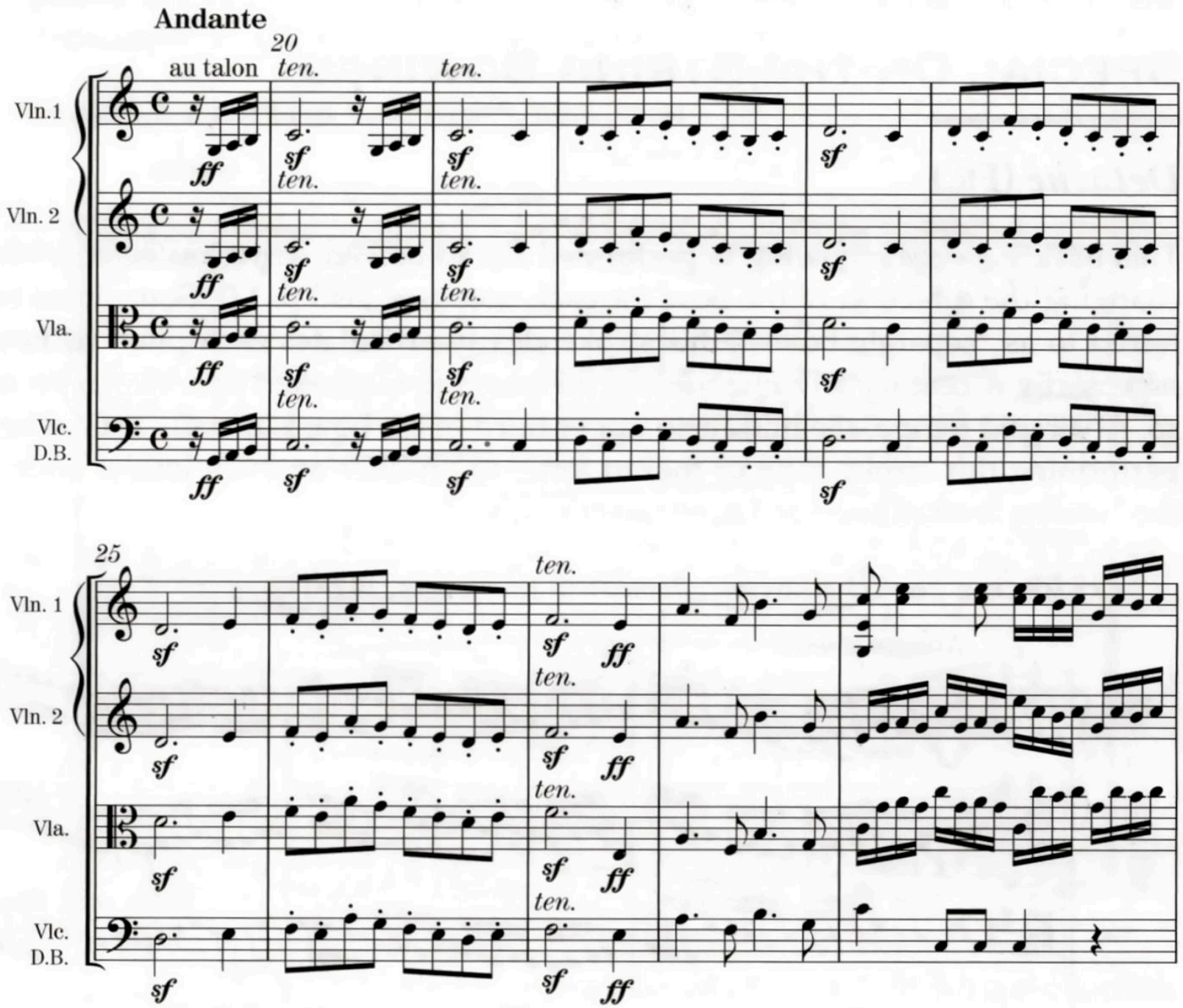
EXAMPLE 2-26. Tchaikovsky, *Romeo and Juliet*, mm. 141–143



EXAMPLE 2-27. Bartók, *Concerto for Orchestra*, fifth movement, mm. 8–13



EXAMPLE 2-28. Gluck, *Iphigenia in Aulis*, Overture, mm. 19–29



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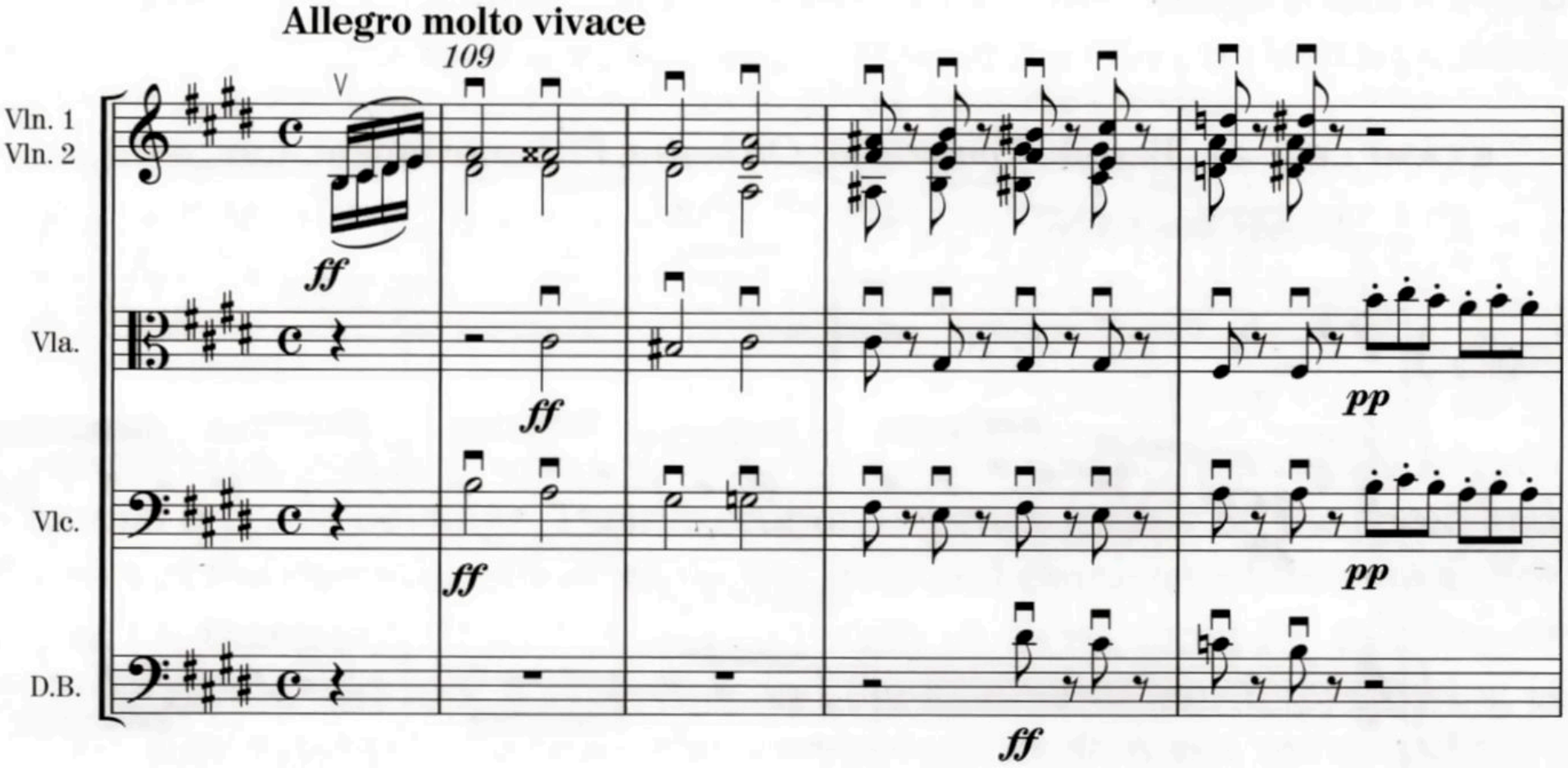
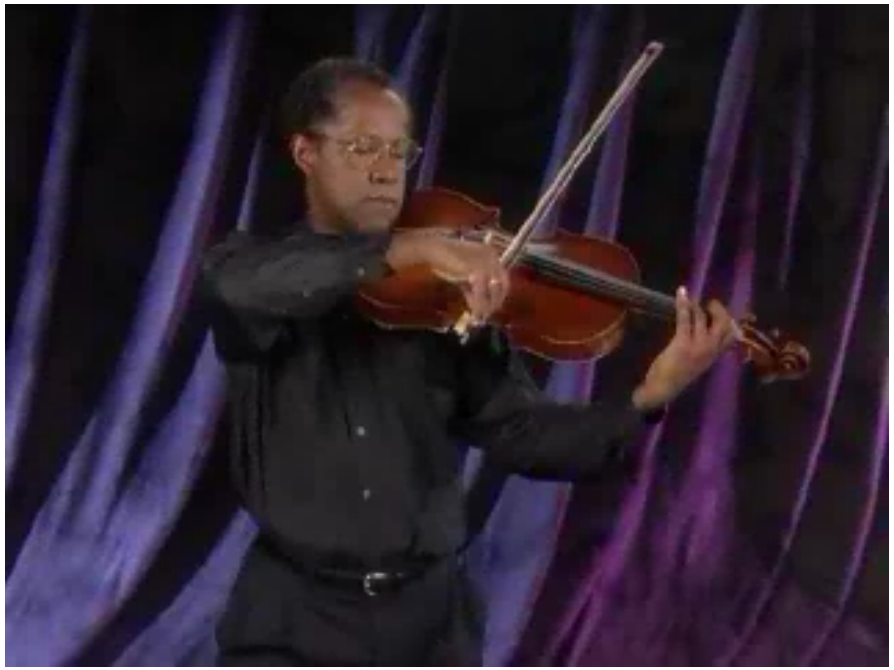
EXAMPLE 2-29. Tchaikovsky, Symphony No. 6, third movement, mm. 108–112



LOURÉ

É uma arcada *legato* tocada a partir de sutis separações entre as notas. Pode produzir um efeito muito expressivo e é comum também em acompanhamentos. É indicada pelo símbolo de tenuto adicionado embaixo da cabeça das notas e delimitado pelas ligaduras (separando entre talão e ponta).



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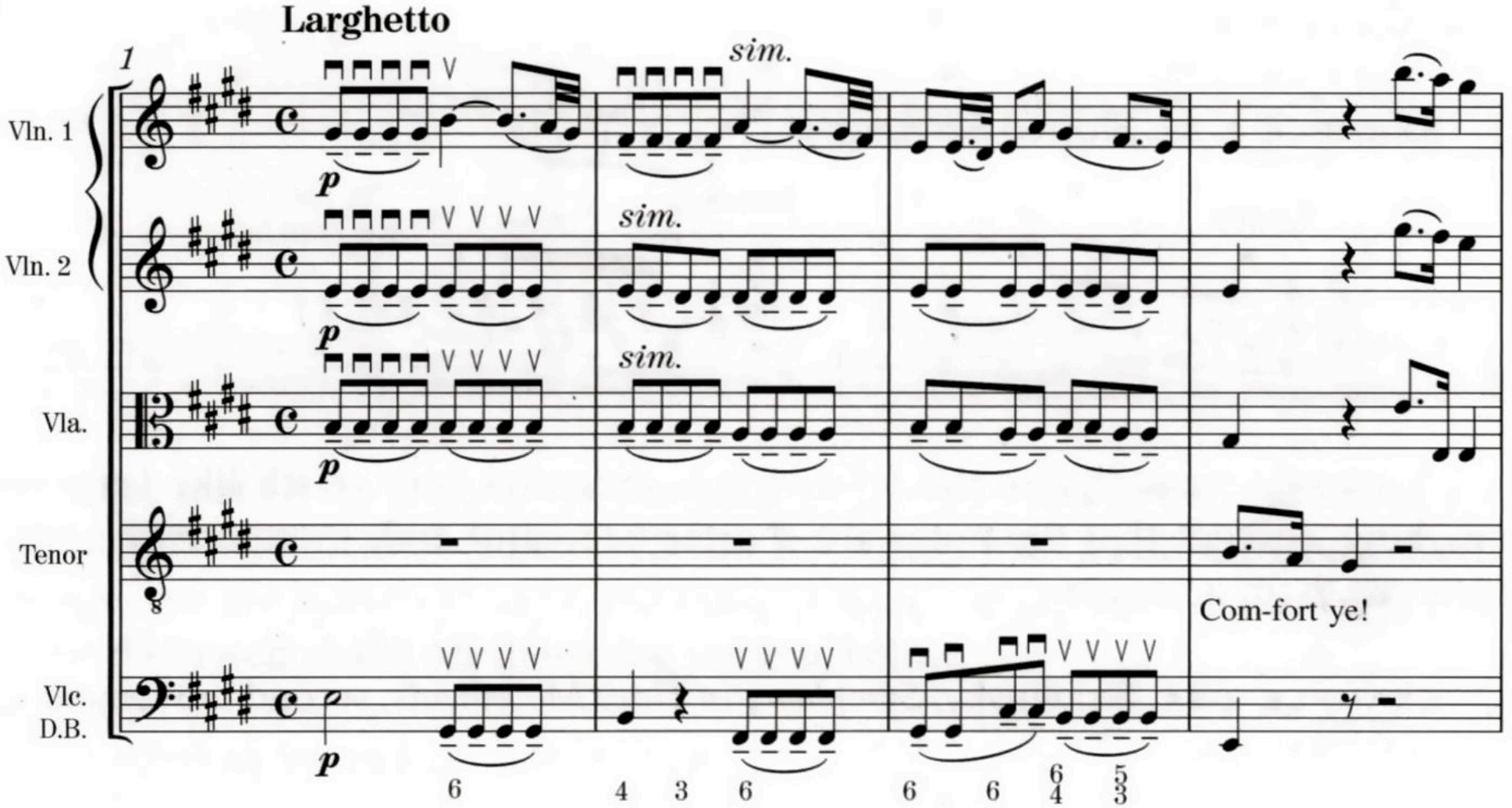
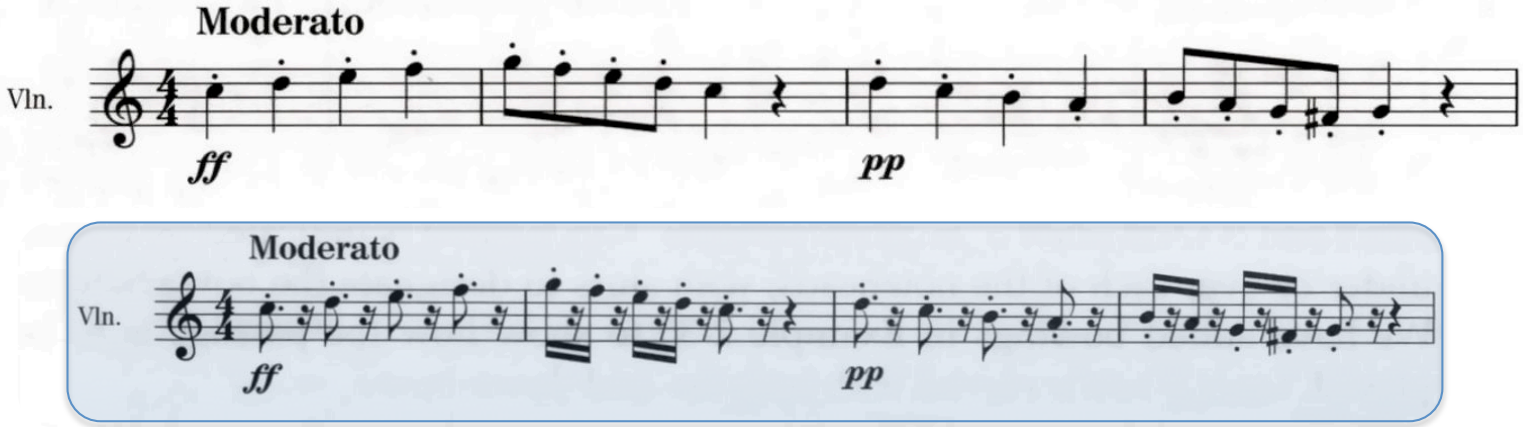
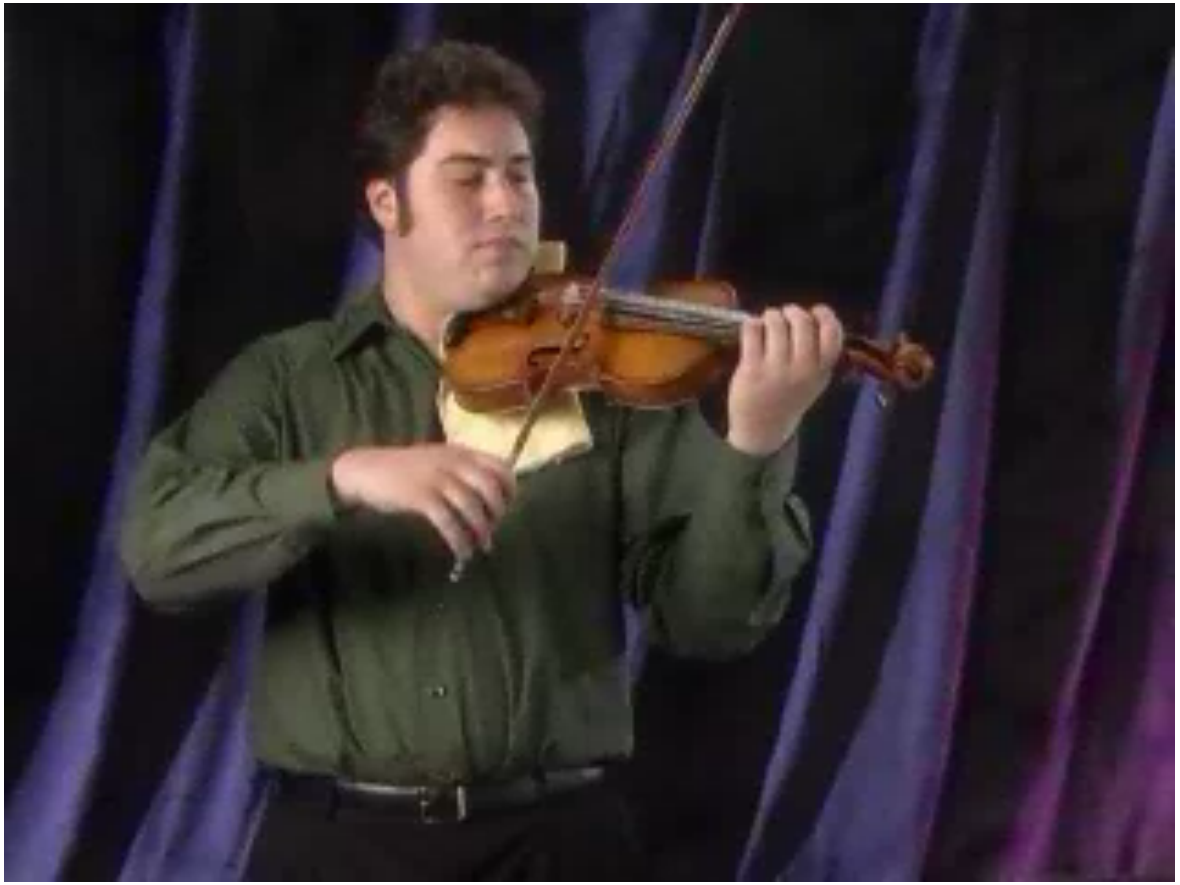
EXAMPLE 2-30. Handel, *Messiah*, "Comfort Ye," mm. 1–4 (tenor part not recorded on CD)



STACCATO





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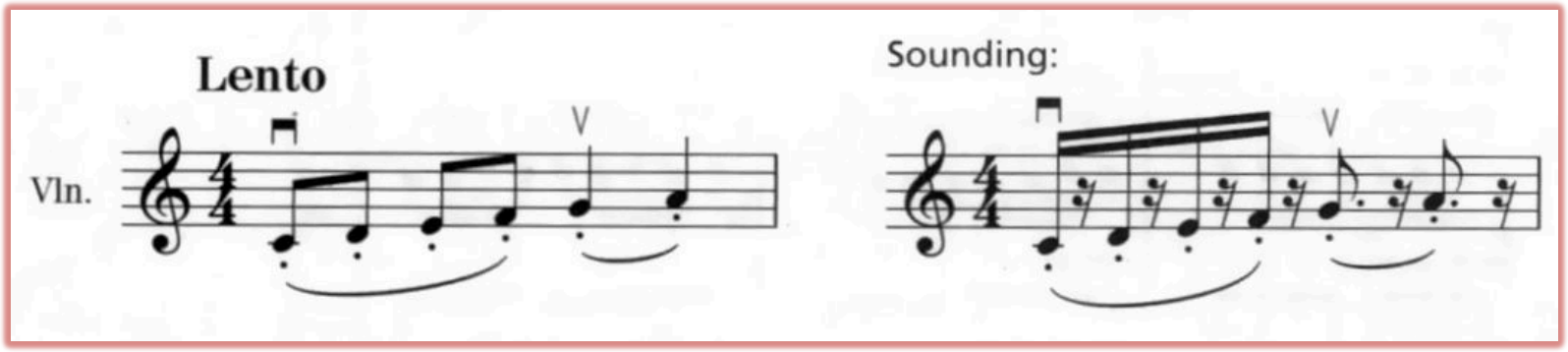
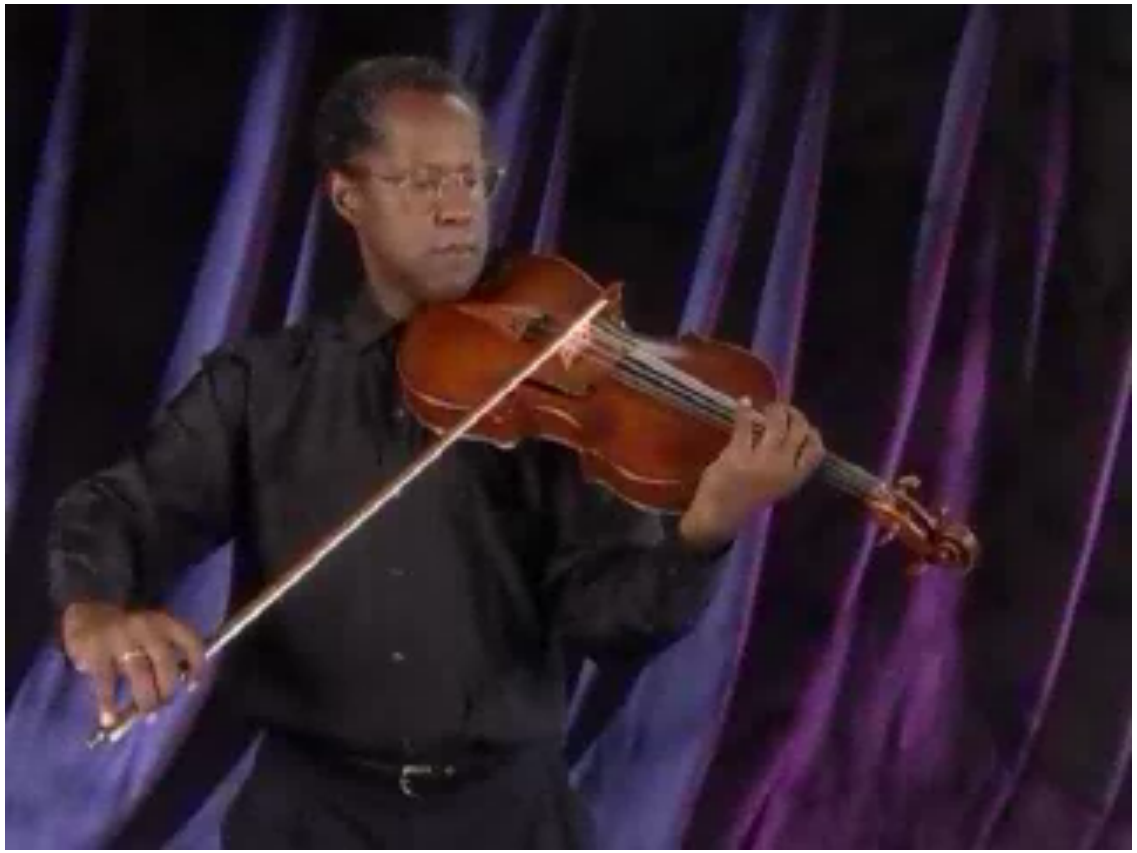
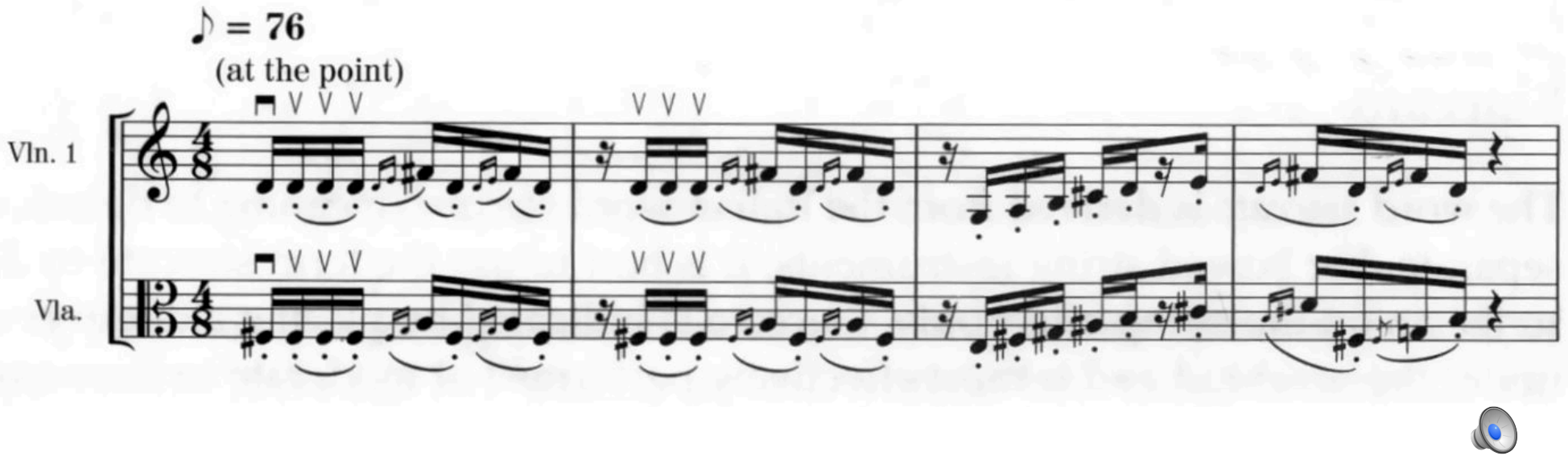
Staccato com ligadura



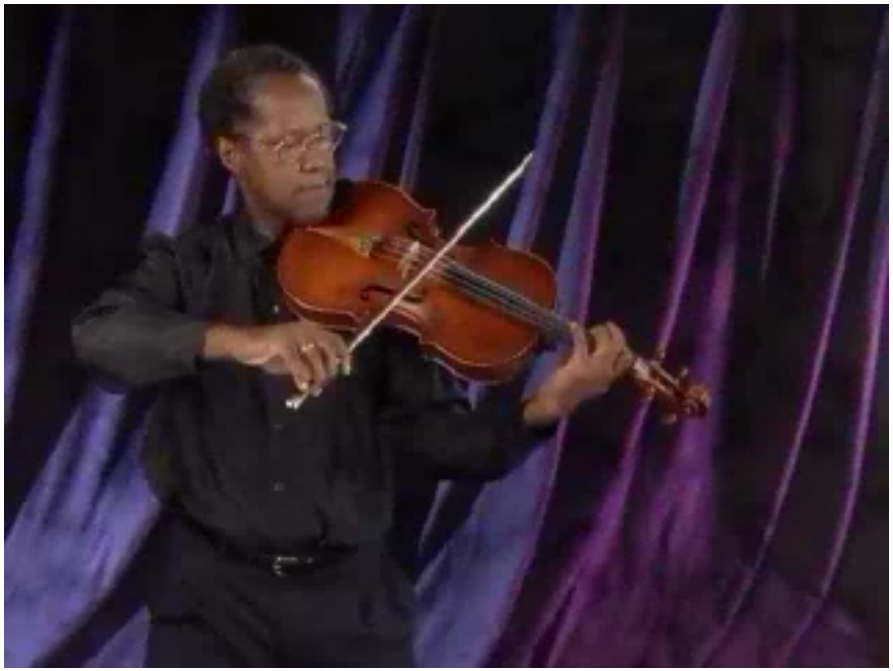


EXAMPLE 2-34. Stravinsky, *Symphony in Three Movements*, second movement, at 135

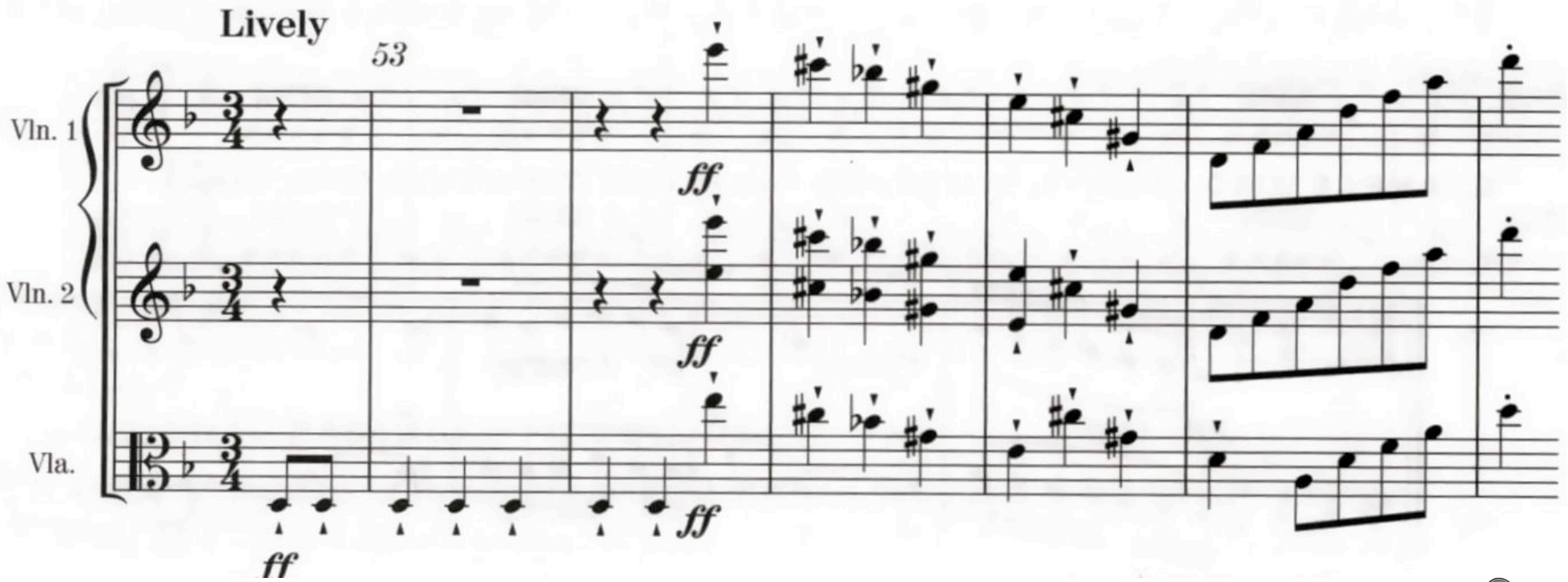


MARTELÉ

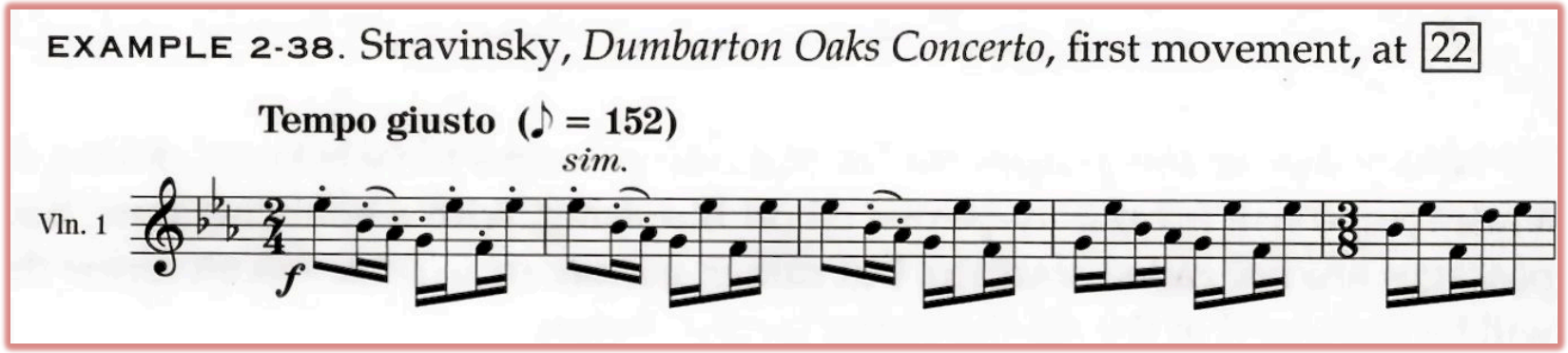
É uma arcada rápida, bem articulada, pesada e que lembra um *sforzando*. Pode ser tocada na ponta, meio e no talão do arco.



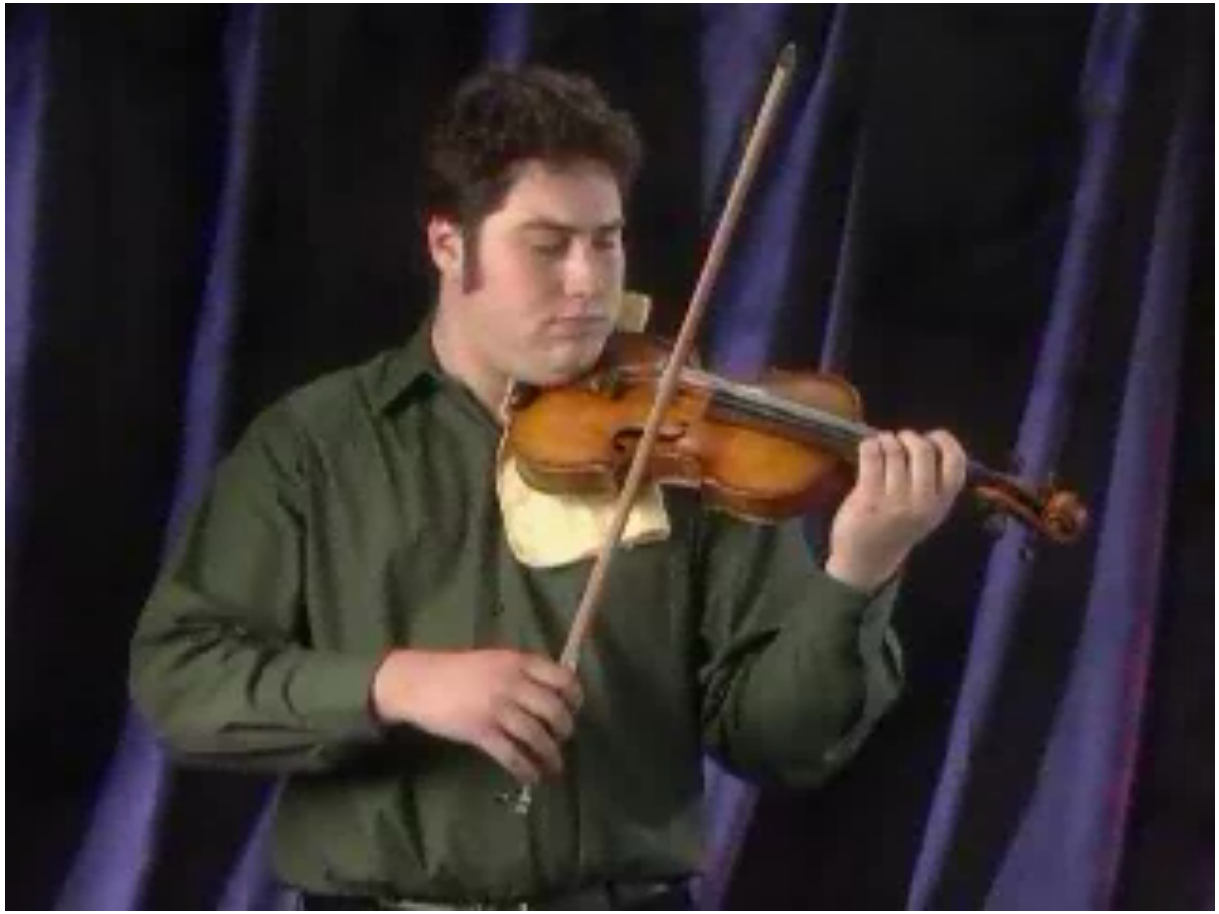
EXAMPLE 2-37. Bruckner, Symphony No. 9, second movement, mm. 52–58



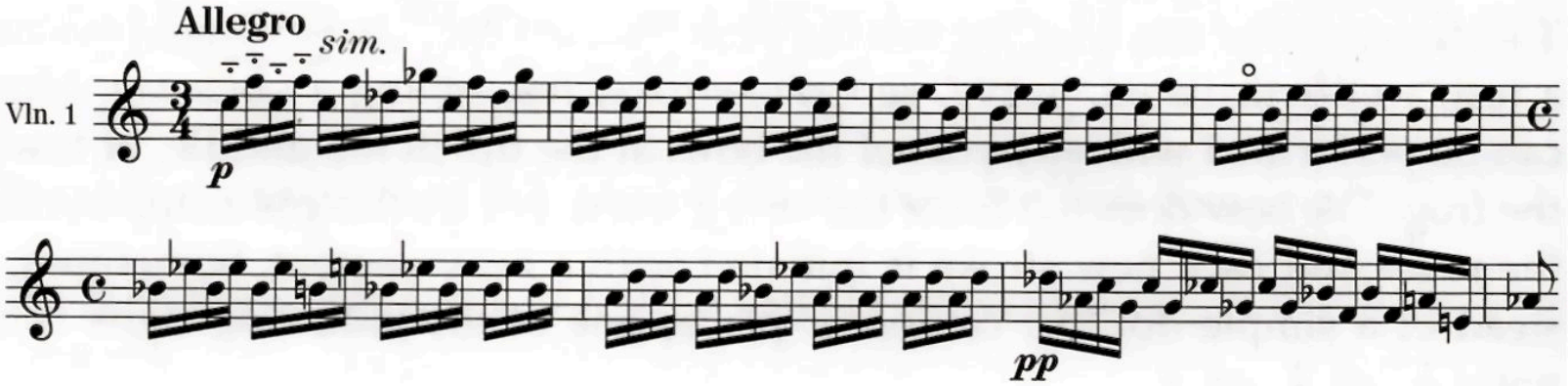
SPICCATO

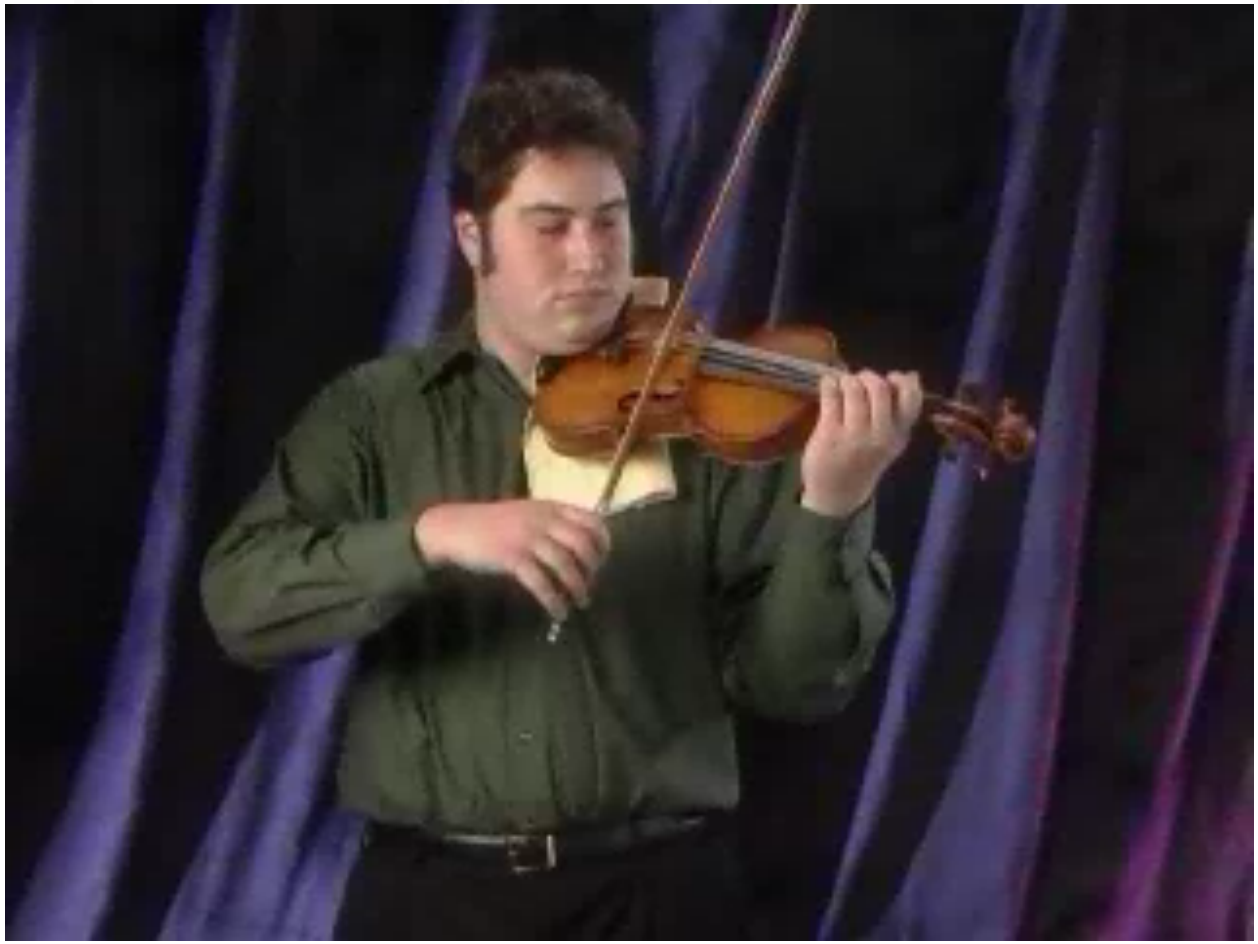


É uma arcada rápida, com notação semelhante ao *staccato*, bem articulada e gerada a partir de pequenos golpes de arco. A performance pode variar de acordo com o caráter do andamento e das dinâmicas.

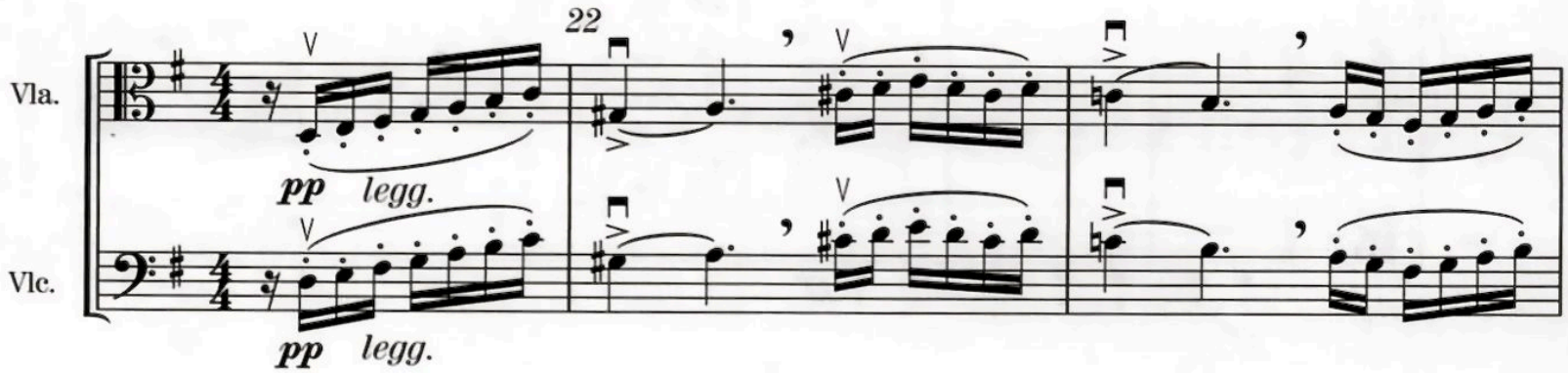


EXAMPLE 2-39. Rachmaninoff, *Symphonic Dances*, first movement, at 18





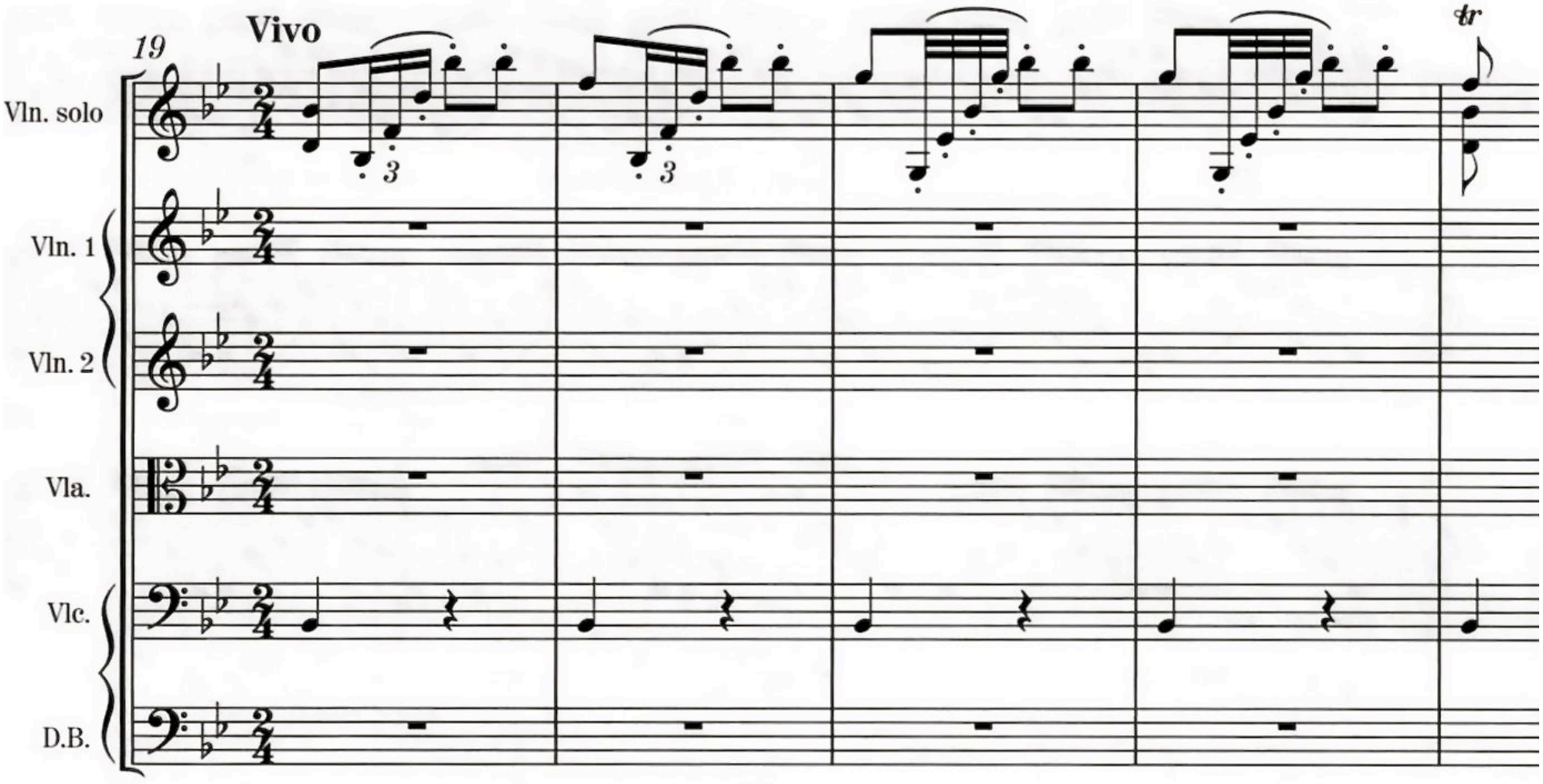
EXAMPLE 2-40. Mahler, Symphony No. 4, first movement, mm. 21–23



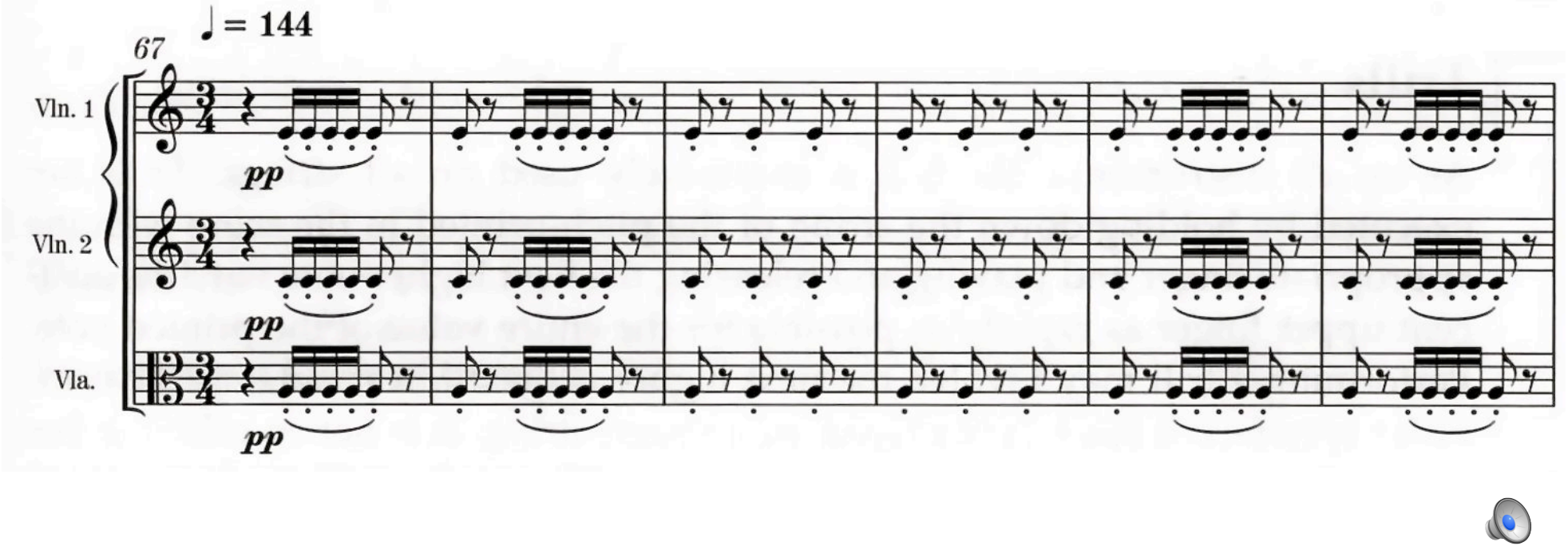
JETÉ (Fr.); RICOCHET (Eng.)

O Jeté é um rebote controlado de percussões realizadas com o arco sobre a corda.

EXAMPLE 2-41. Rimsky-Korsakov, *Capriccio espagnol*, third movement, mm. 19–22 (violin solo only recorded)

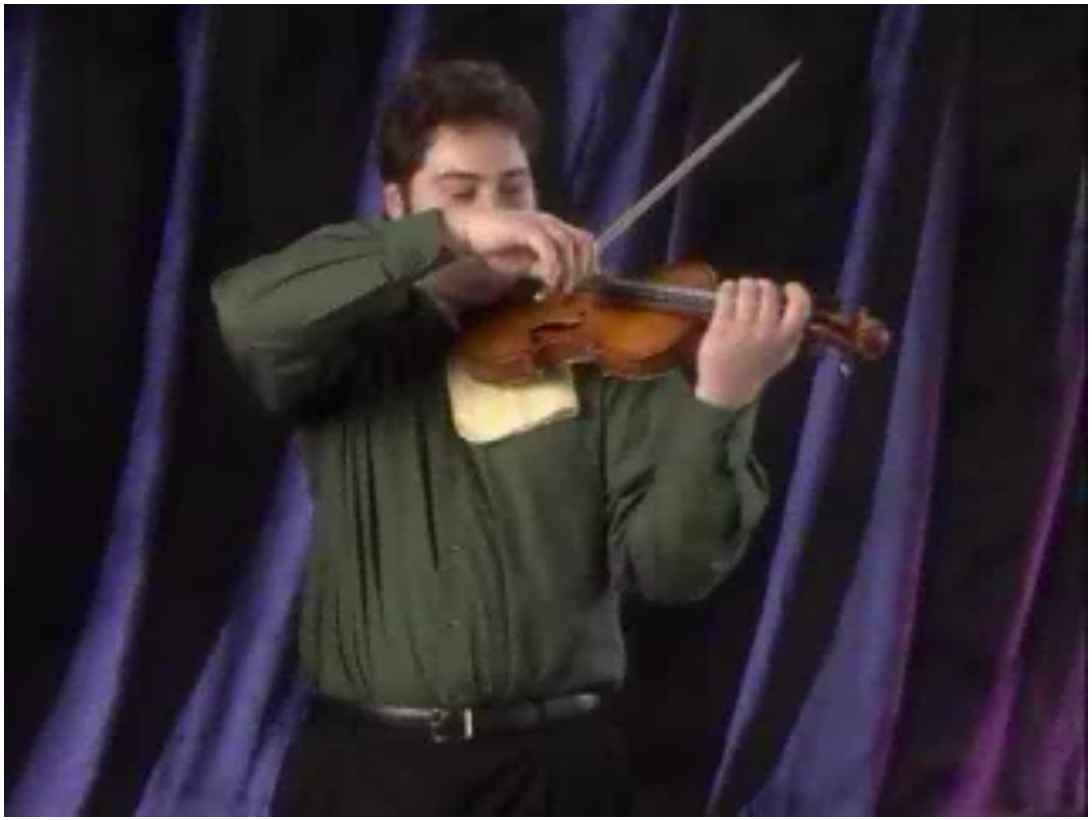


EXAMPLE 2-42. Shostakovich, Symphony No. 8, second movement, mm. 67–72 CD-

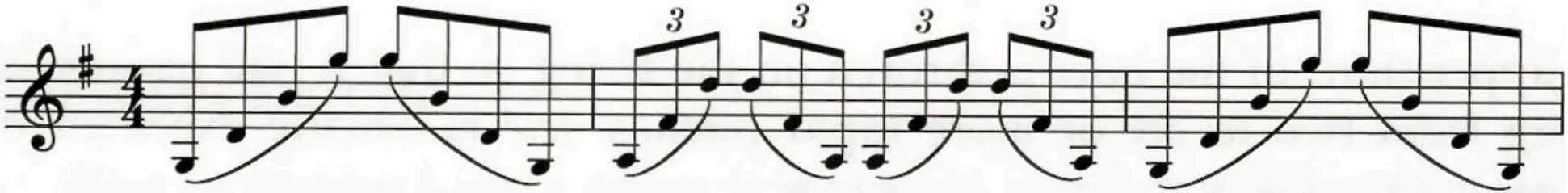


ARPEGGIANDO

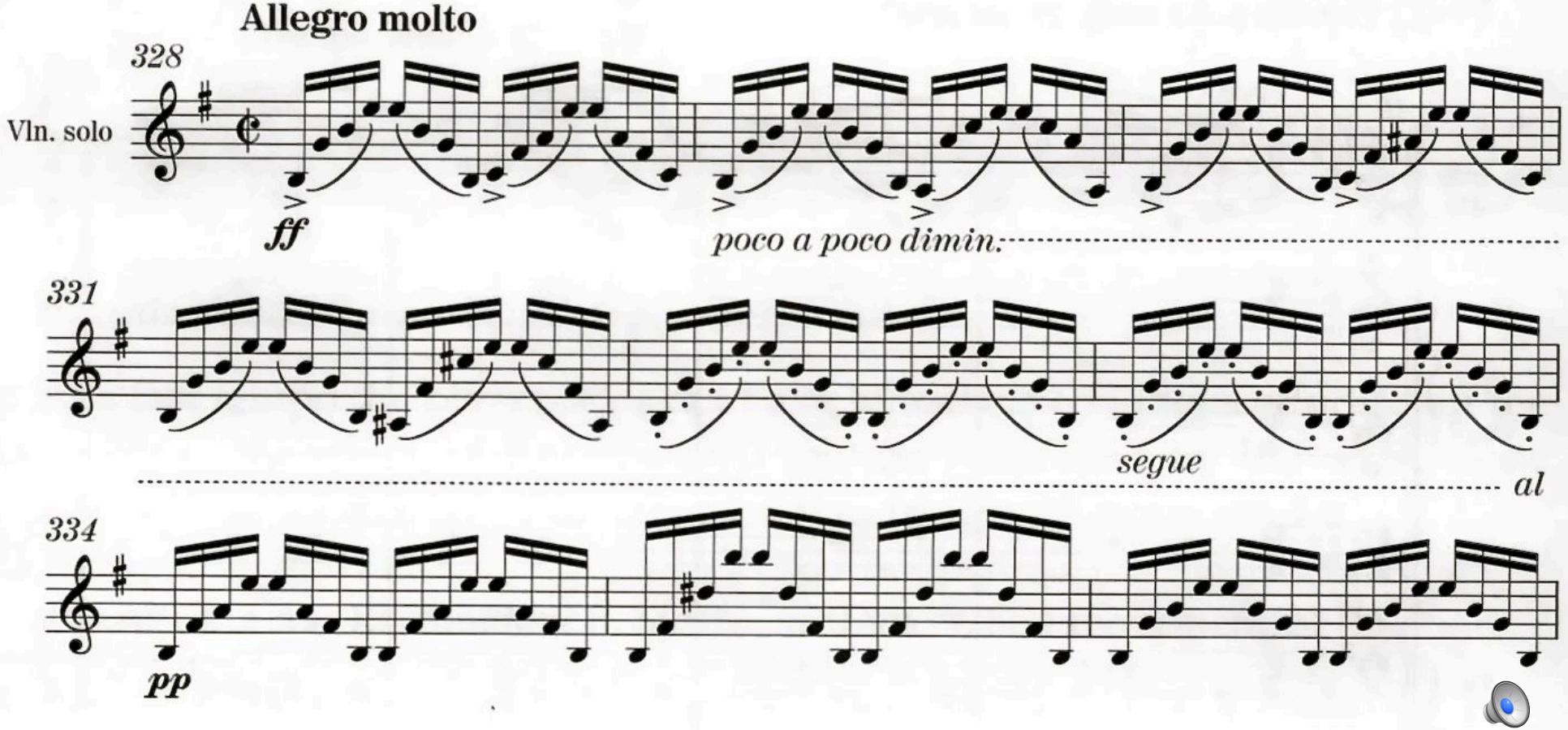
Sutilmente diferente do *spiccato*. Funciona como uma arcada na corda.



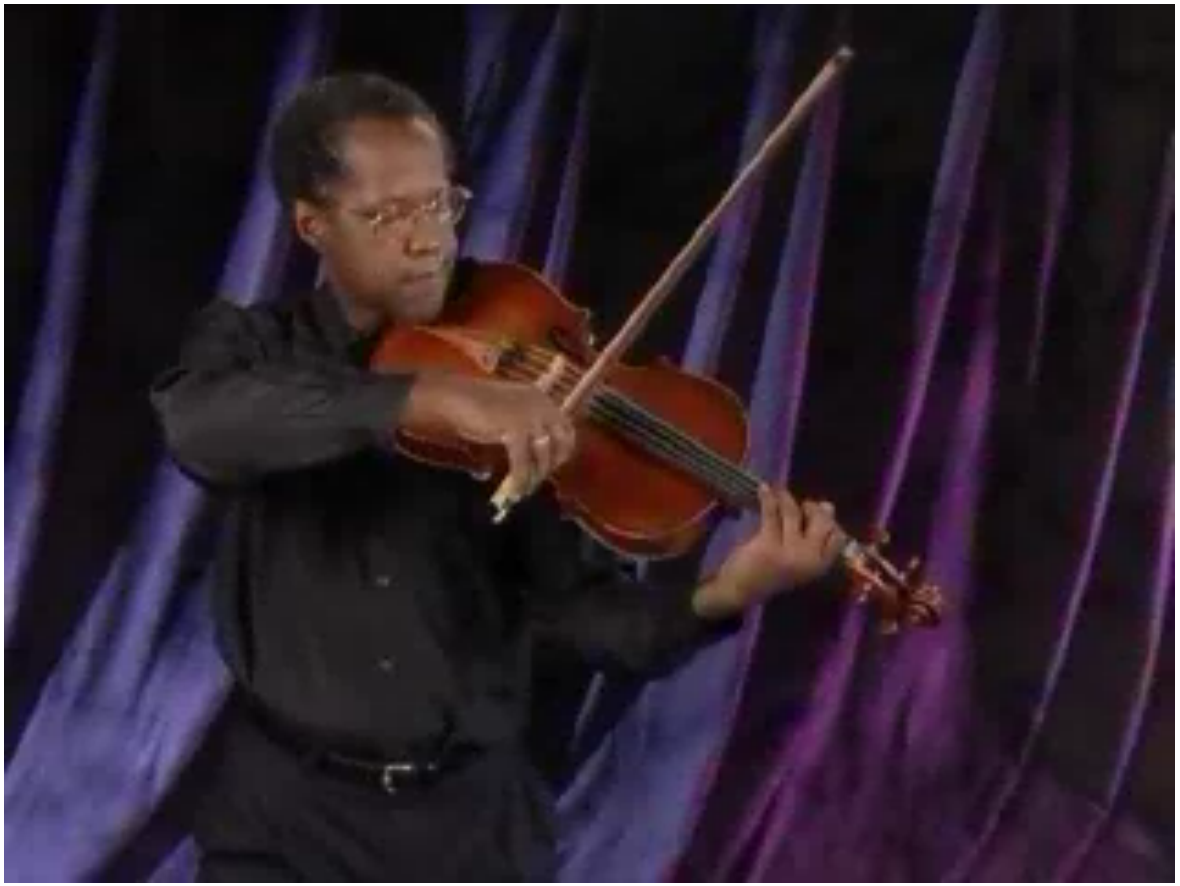
EXAMPLE 2-43. *Arpeggiando*



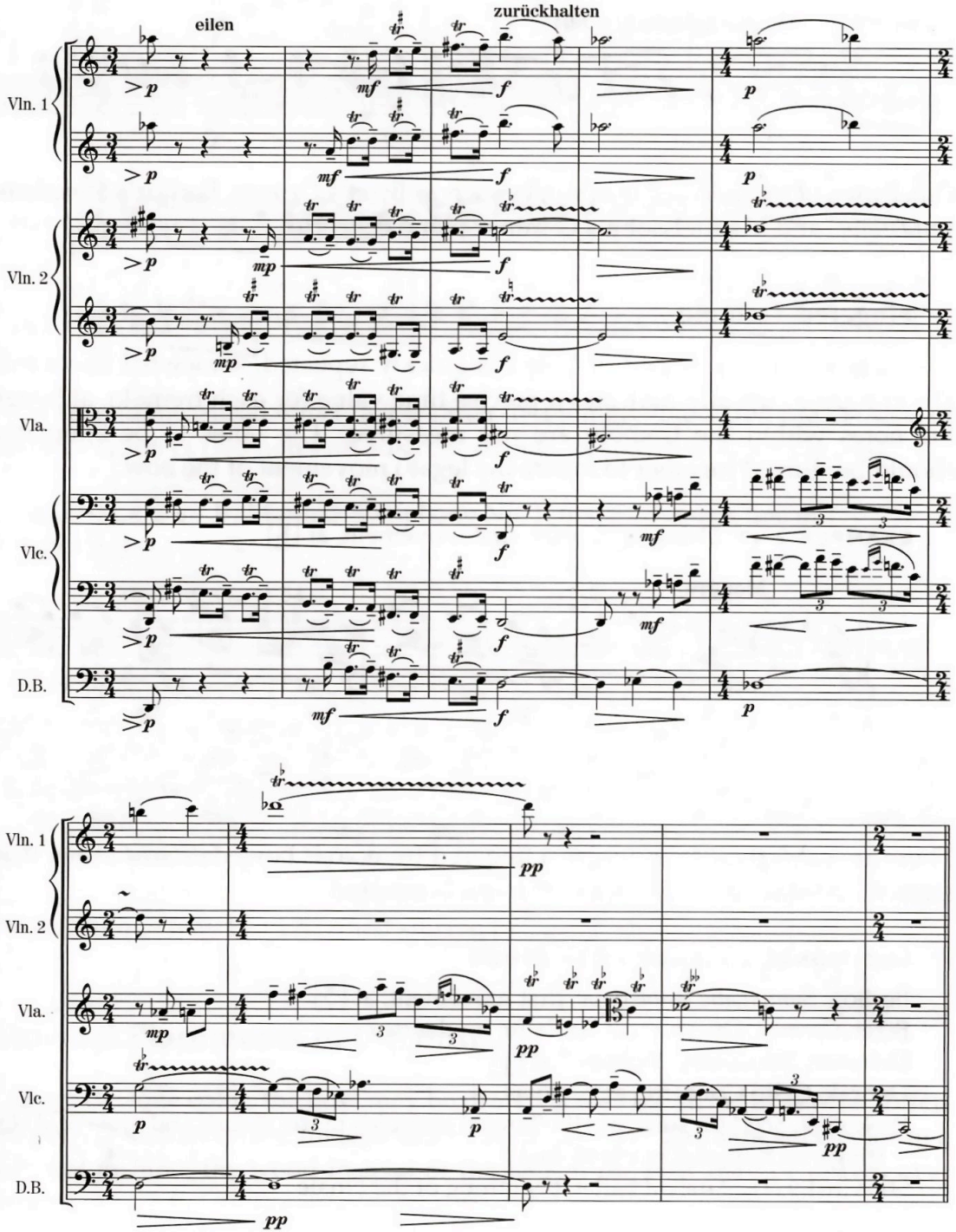
EXAMPLE 2-44. Mendelssohn, Violin Concerto, first movement, mm. 328–336



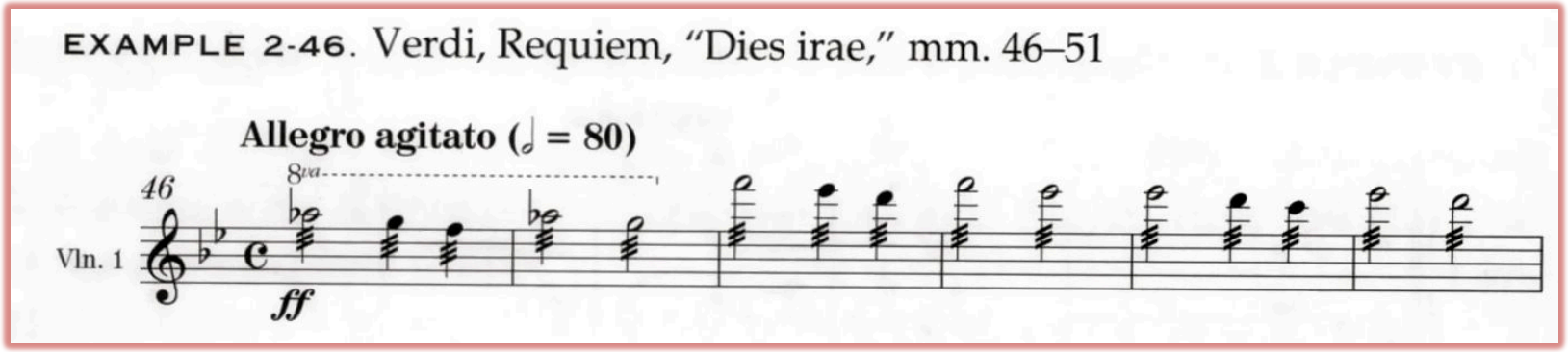
TRINADOS



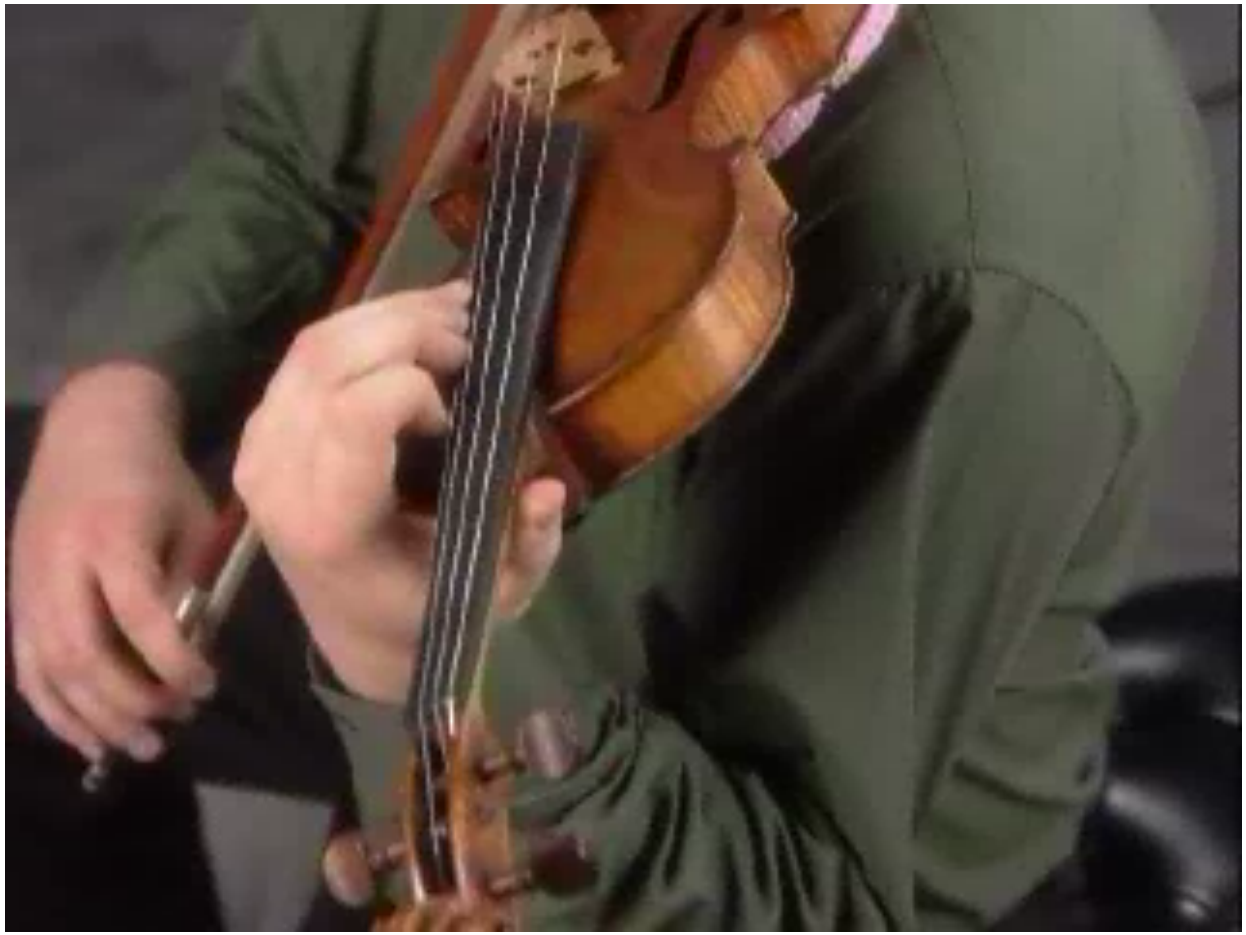
EXAMPLE 2-45. Hindemith, *Mathis der Maler*, third movement, at 16



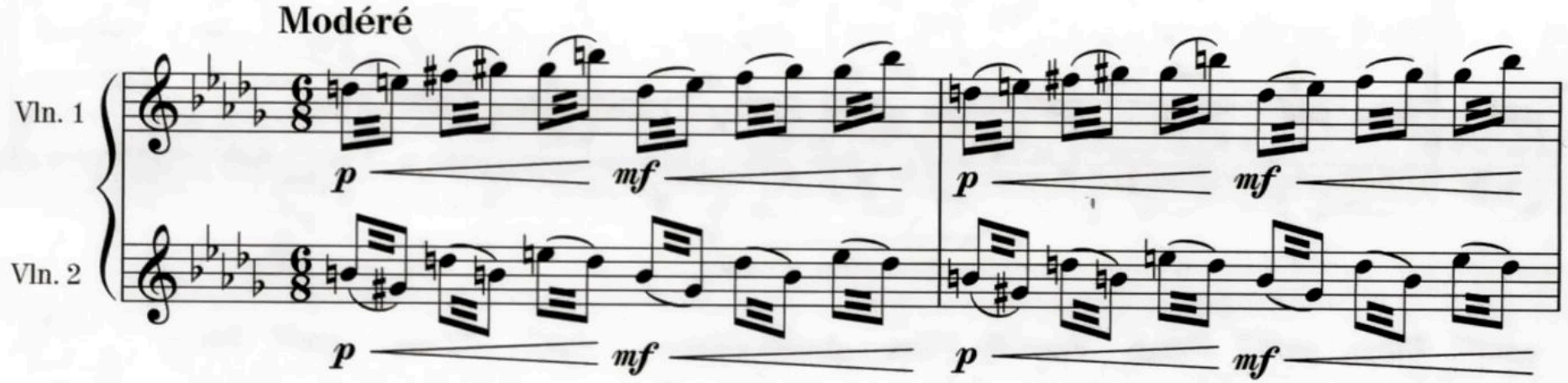
TRÊMULOS

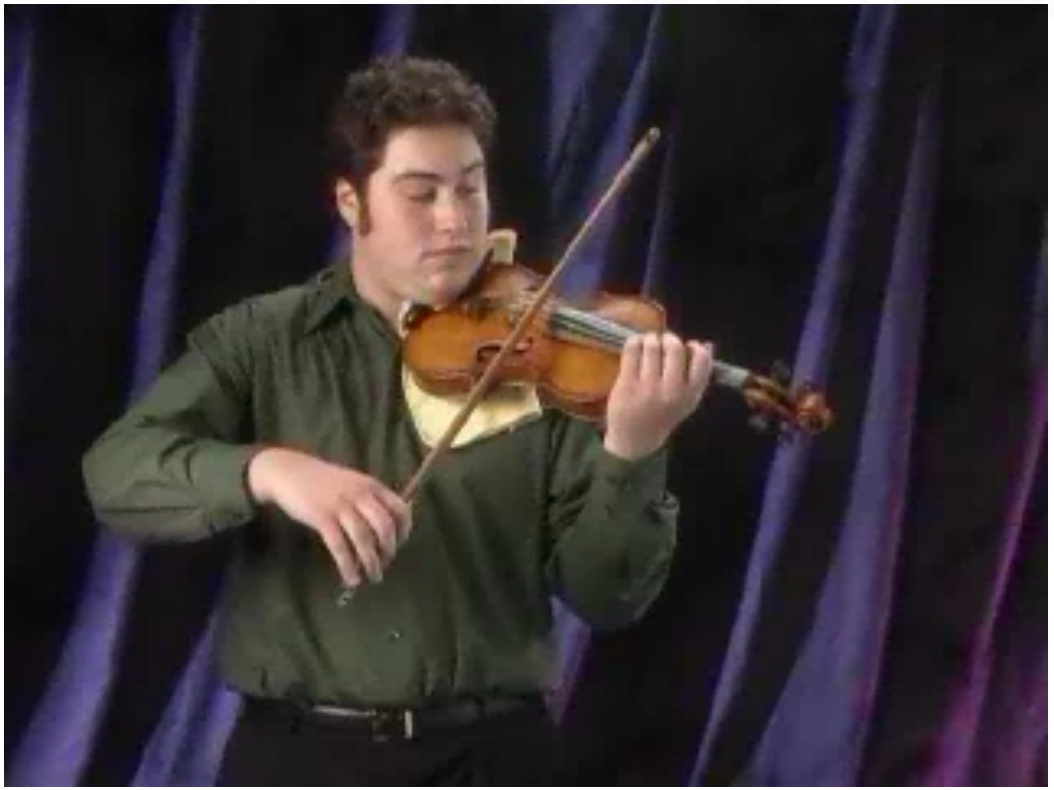


Extensivamente utilizado em todos os instrumentos. Existem dois tipos de trêmulos: trêmulo de arco e trêmulo de dedo.



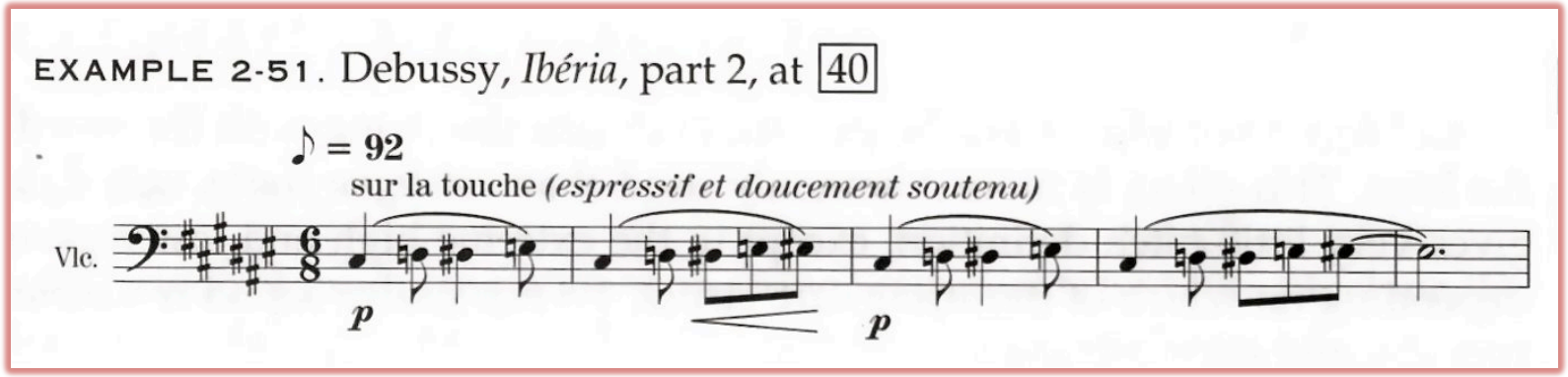
EXAMPLE 2-47. Debussy, *La Mer*, first movement, at 8





Diferentes utilizações com o arco

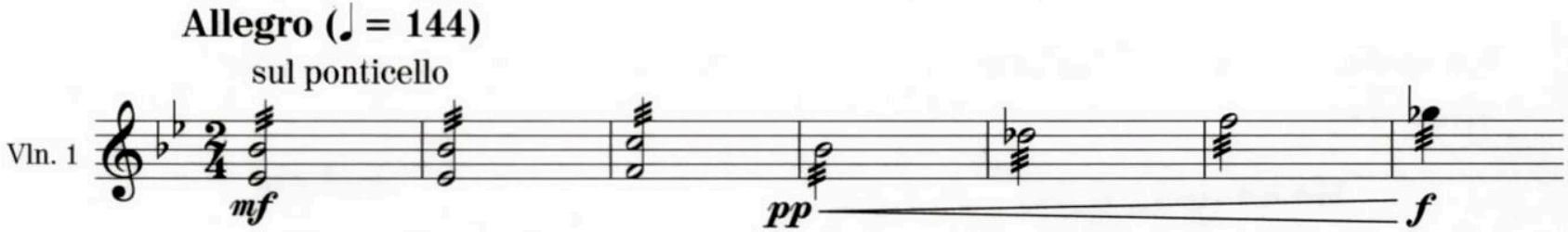
SUL TASTO (Francês: *Sur la touche*)



O músico toca com o arco em cima do espelho obtendo um som "flautado", suave e com menos harmônicos agudos. Técnica também adaptada e utilizada em outros instrumentos de corda, como o violão.

SUL PONTICELLO (Francês: *Al chevalet*)

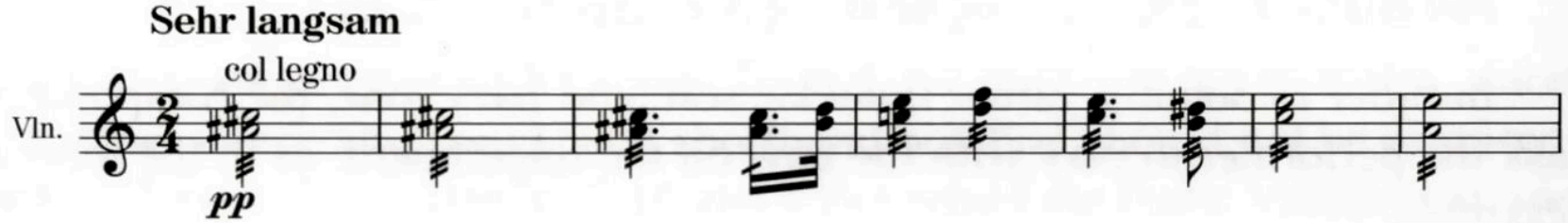
EXAMPLE 2-52. Puccini, *Madama Butterfly*, Act I, 3 mm. before 38



A indicação de *sul ponticello* determina que o músico deve passar o arco próximo ao cavalete, o que origina um som de timbre agudo, de arranhudura, com menos fundamental e muitos harmônicos agudos.

COL LEGNO

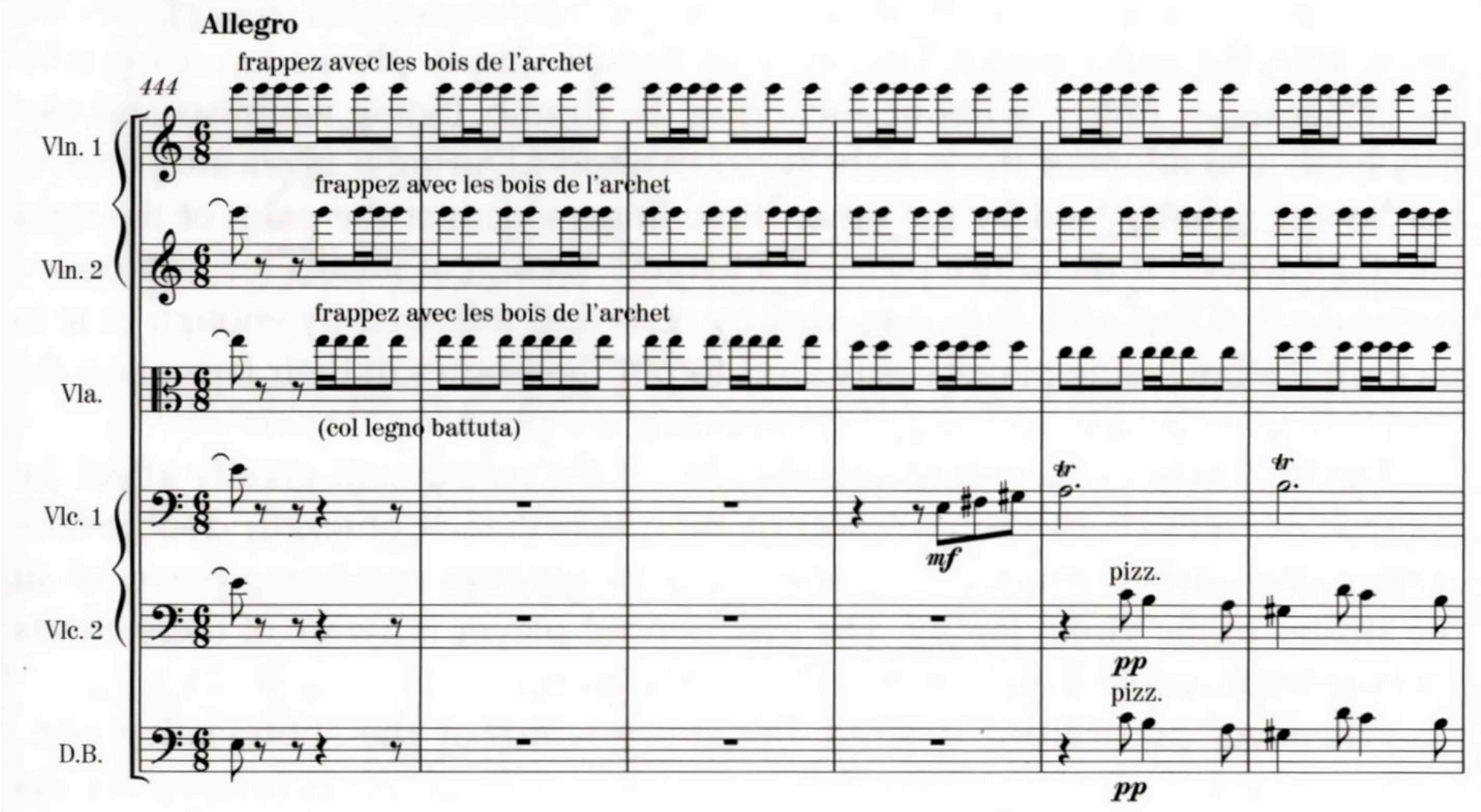
EXAMPLE 2-53. R. Strauss, *Also sprach Zarathustra*, at 12

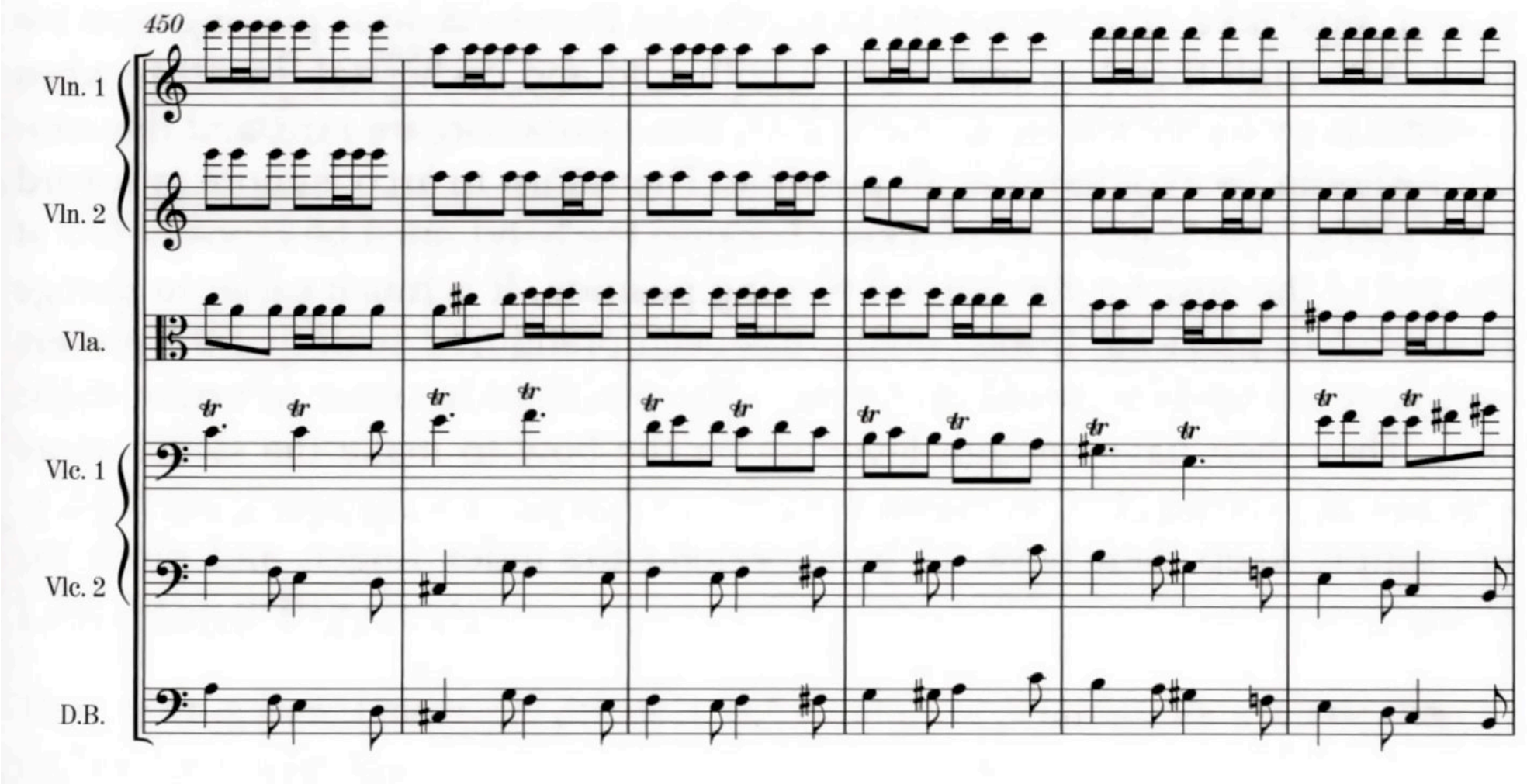


O arco é segurado de lado e as cordas são friccionadas ou percutidas com a madeira e não com as cerdas.

COL LEGNO BATTUTO

EXAMPLE 2-54. Berlioz, *Symphonie fantastique*, fifth movement, mm. 444–455

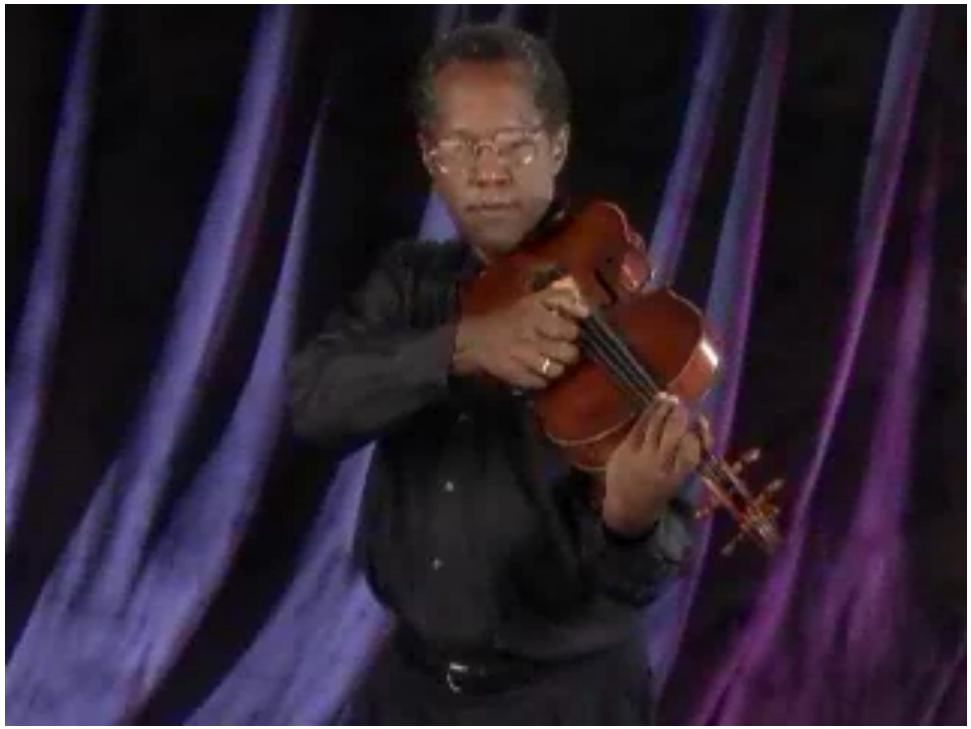



450
Vln. 1
Vln. 2
Vla.
Vlc. 1
Vlc. 2
D.B.

Efeitos timbrísticos sem o arco

PIZZICATO

Efeito muito comum em todo o repertório para cordas, acontece com a mudança na maneira como o som é produzido. No *pizzicato* as notas são beliscadas (pinçadas) ao invés de se utilizar o arco. É indicado na partitura com a abreviatura *pizz.*. Quando deseja-se voltar ao arco escreve-se acima do início da passagem o termo *arco*.



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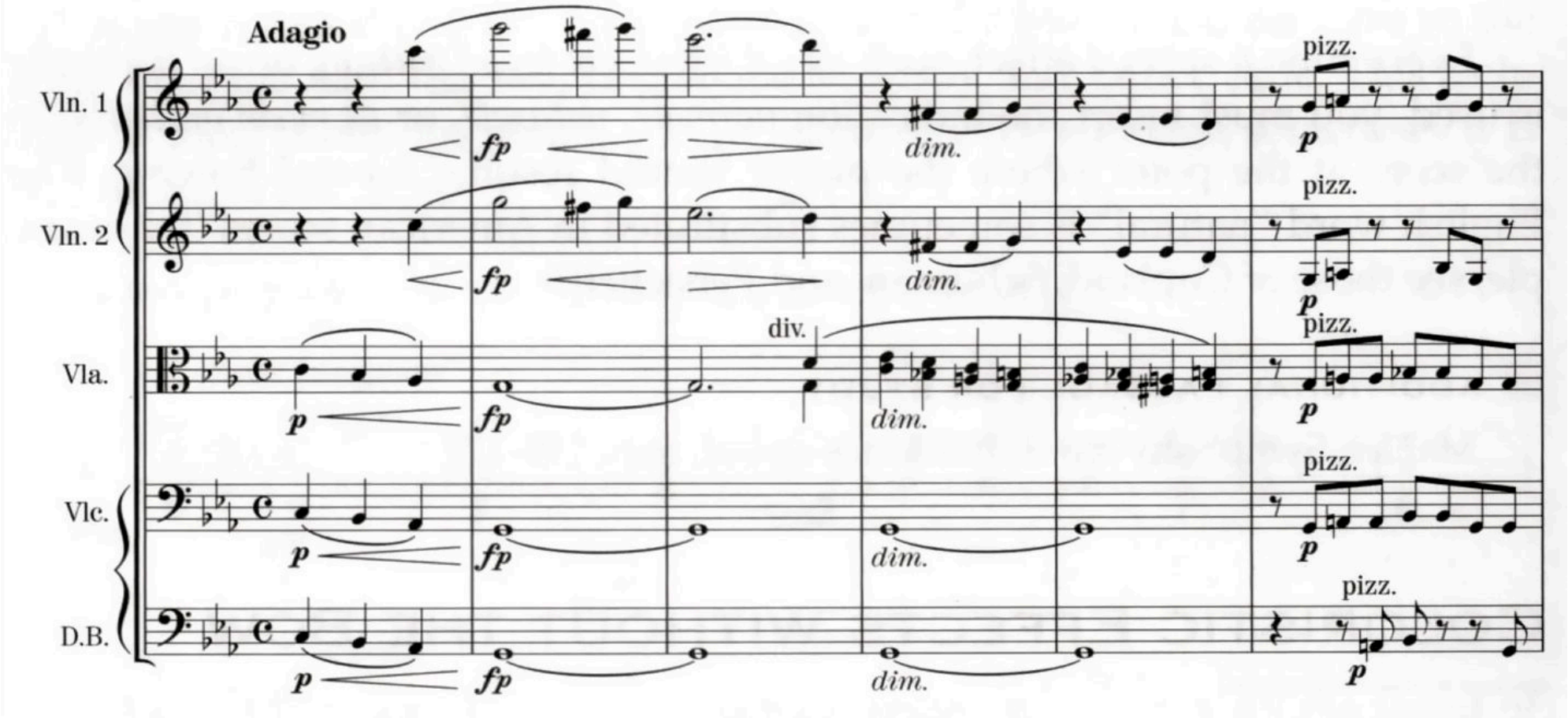
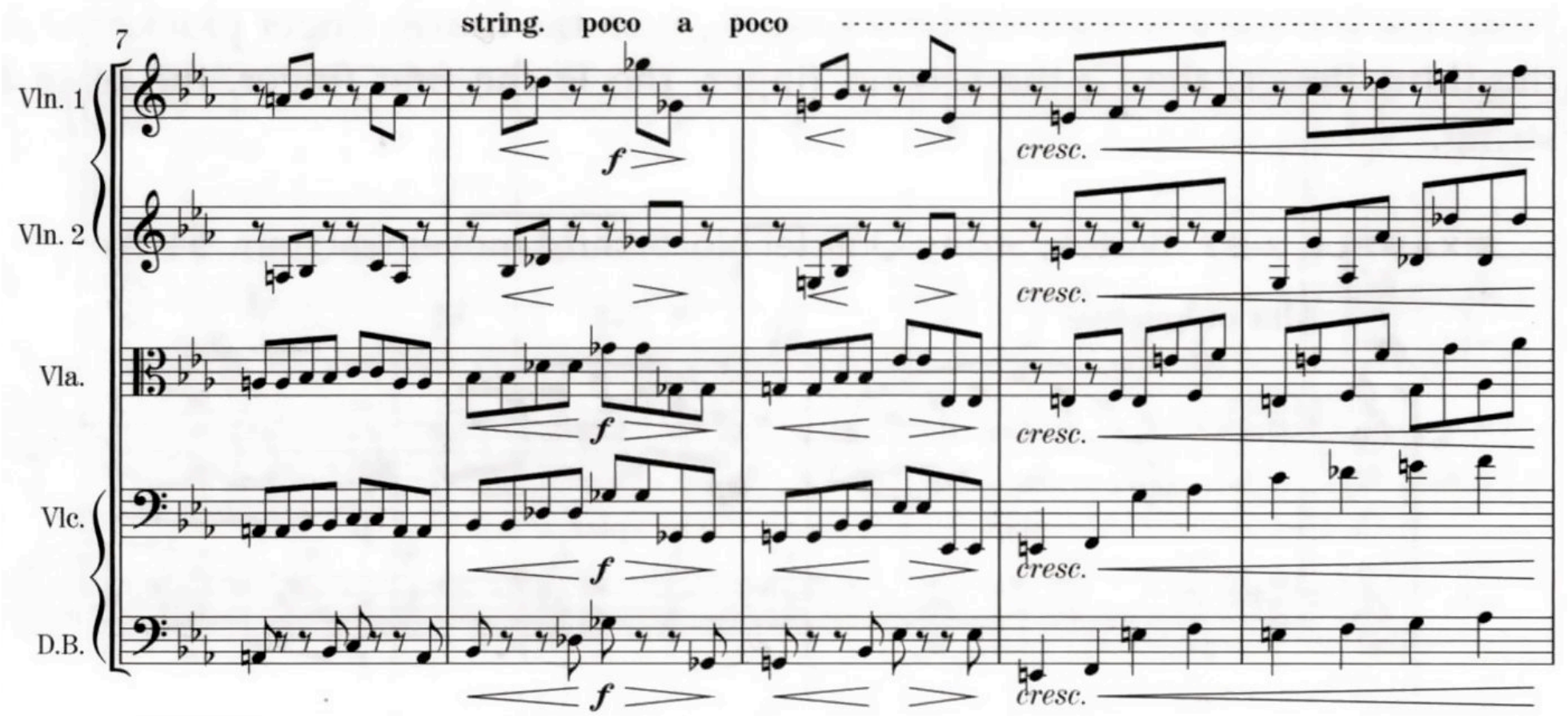
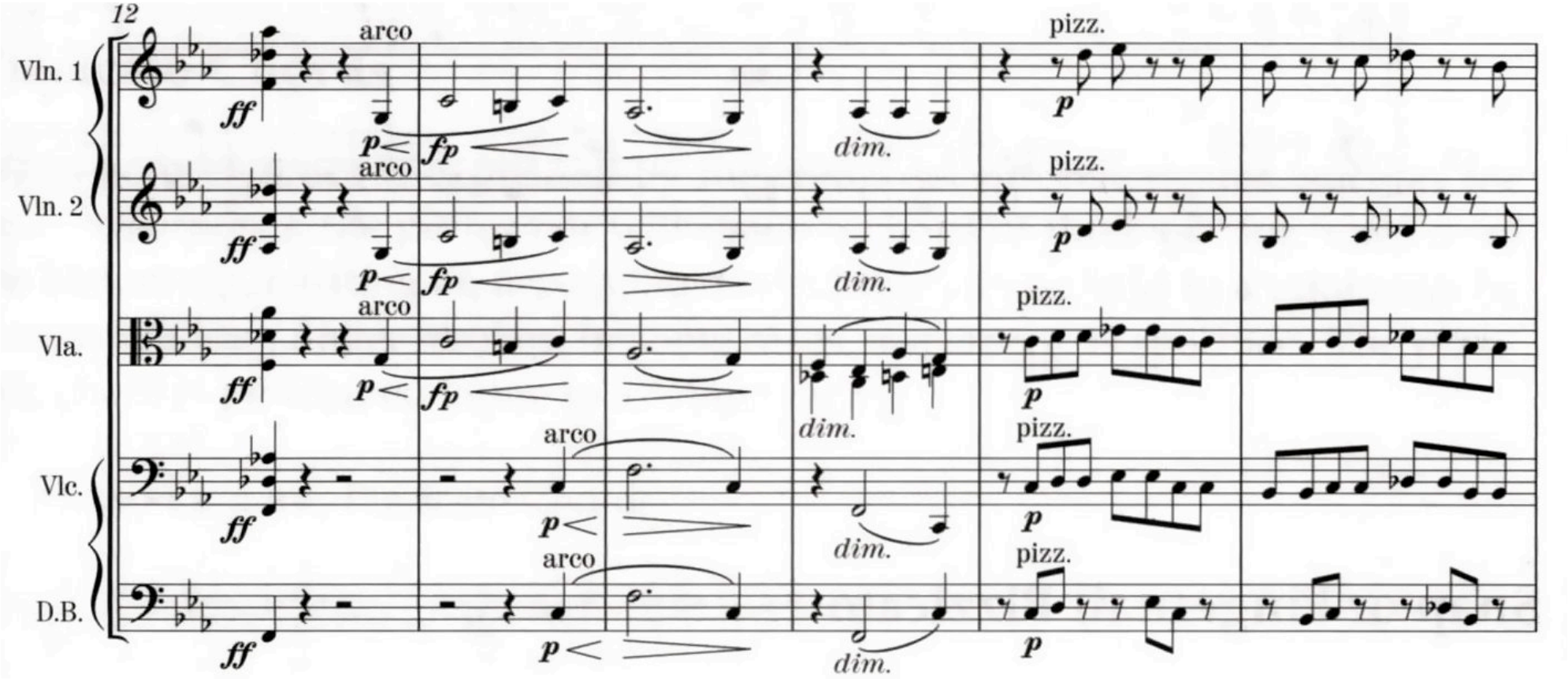
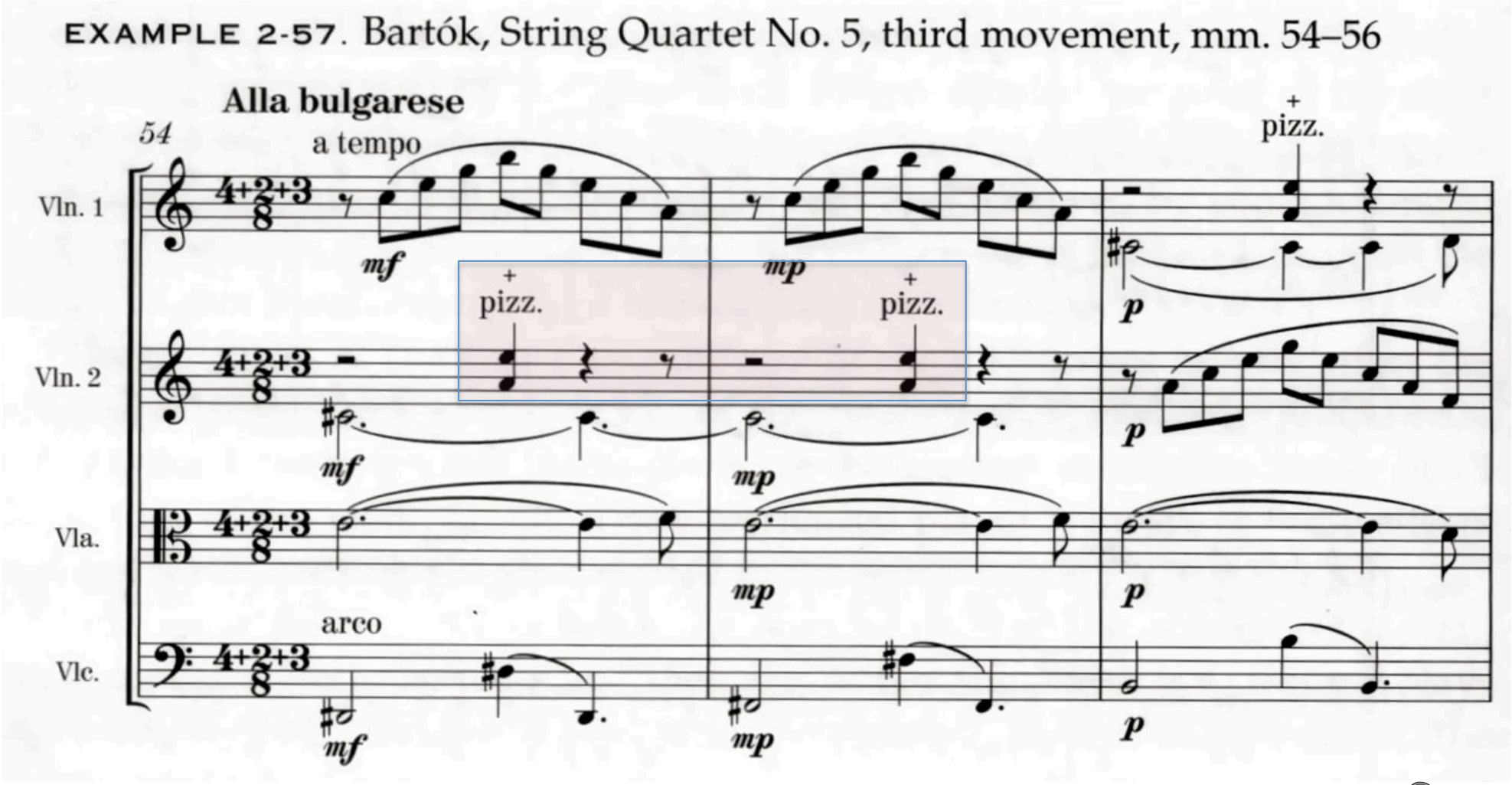
EXAMPLE 2-55. Brahms, Symphony No. 1, fourth movement, mm. 1–17



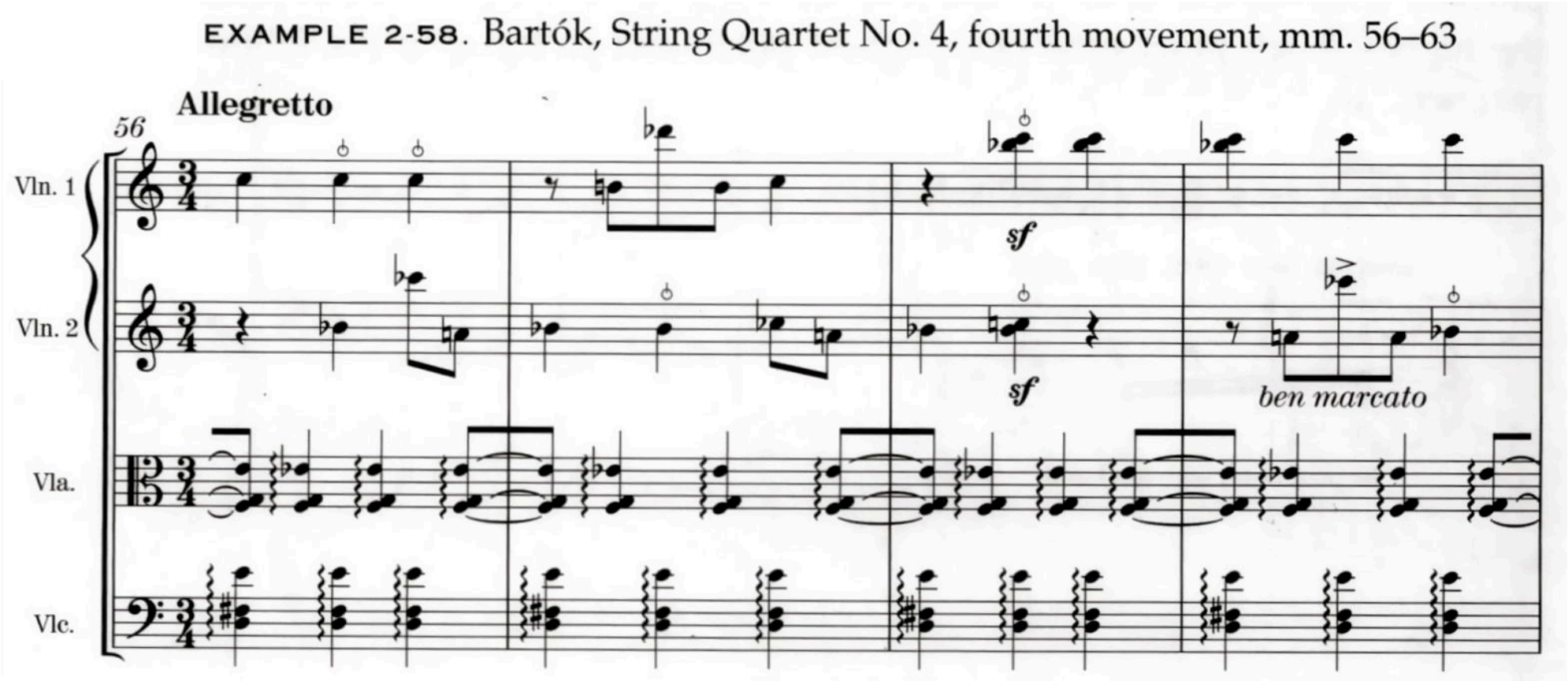

string. poco a poco
7
Vln. 1
Vln. 2
Vla.
Vlc.
D.B.
f
cresc.

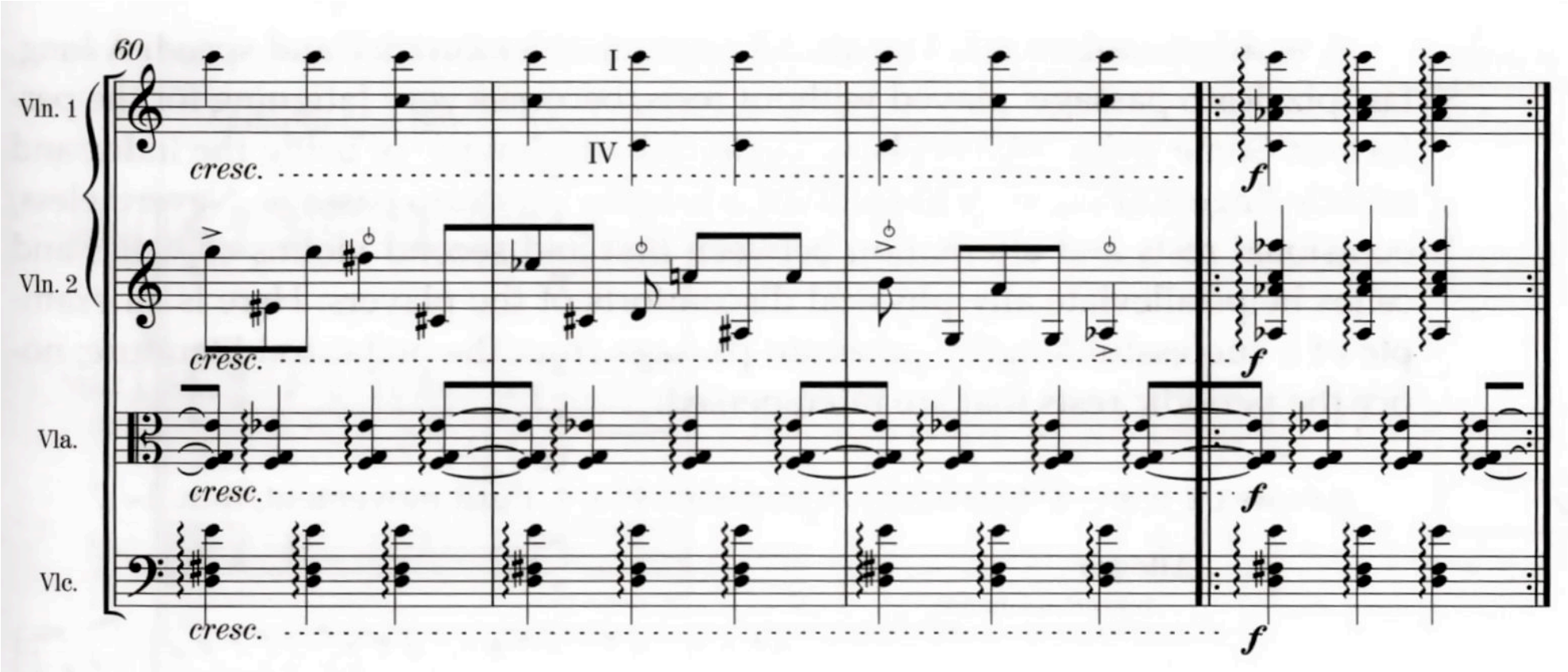

12
Vln. 1
Vln. 2
Vla.
Vlc.
D.B.
arco
pizz.
ff
p
fp
dim.

EXAMPLE 2-57. Bartók, String Quartet No. 5, third movement, mm. 54–56



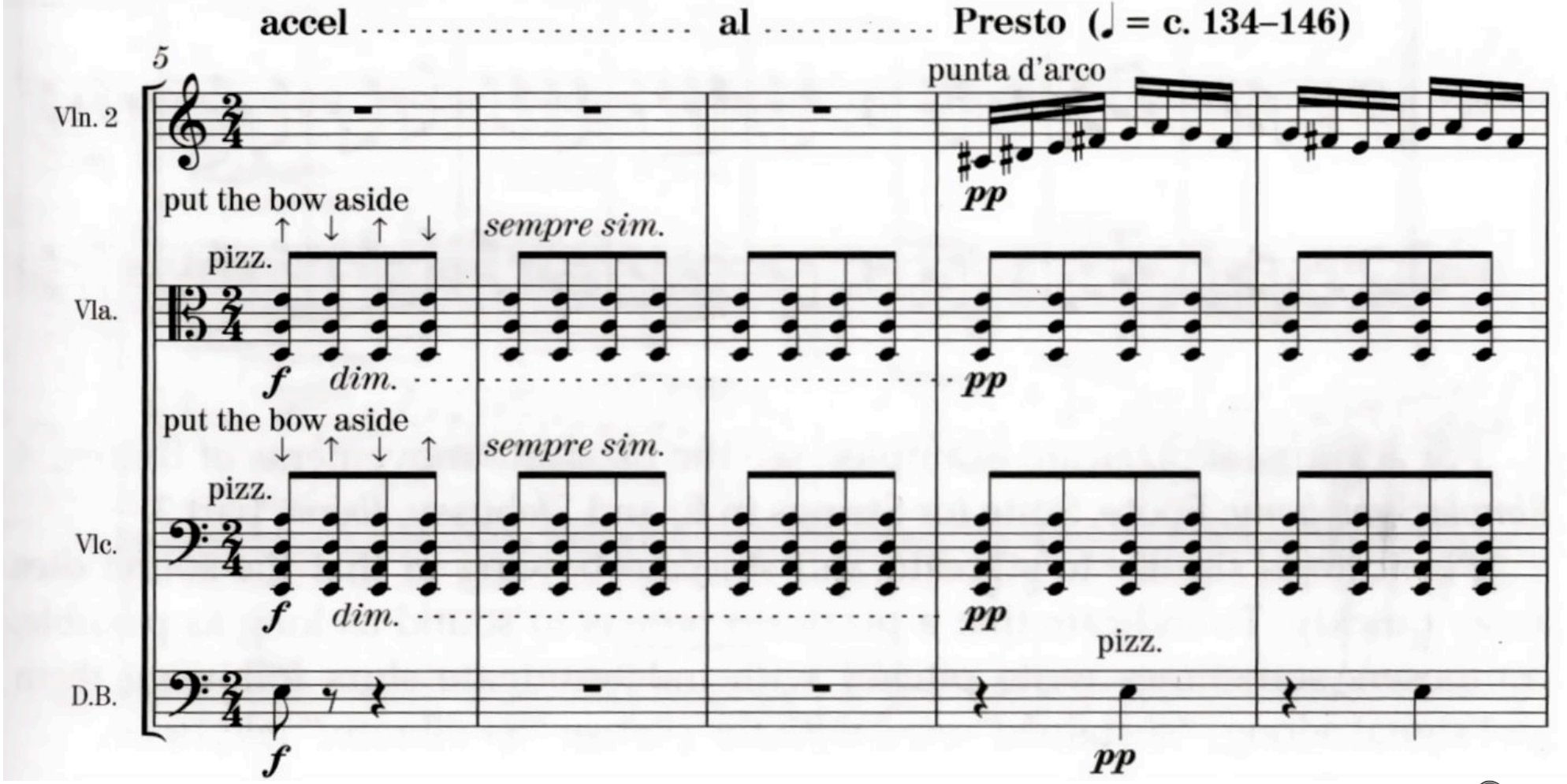
EXAMPLE 2-58. Bartók, String Quartet No. 4, fourth movement, mm. 56–63




60
Vln. 1
Vln. 2
Vla.
Vlc.
I
IV
cresc.
f

Pode-se indicar a direção do pizzicato ou até mesmo escrever: *quasi chitarra* ou *a la chitarra*.

EXAMPLE 2-60. Bartók, *Concerto for Orchestra*, fifth movement, mm. 5–9



CON SORDINO (It.); AVEC SOURDINE (Fr.);

Pequena peça de madeira ou metal que se prende ao cavalete de modo a atenuar as suas vibrações modificando o timbre do instrumento. Para adicionar a surdina escreve-se *con sordino* e para retira-la escreve-se *senza sordino* acima do início da passagem. Deve-se ter atenção ao tempo necessário para o músico adicionar ou retirar a surdina antes de atacar com o arco.

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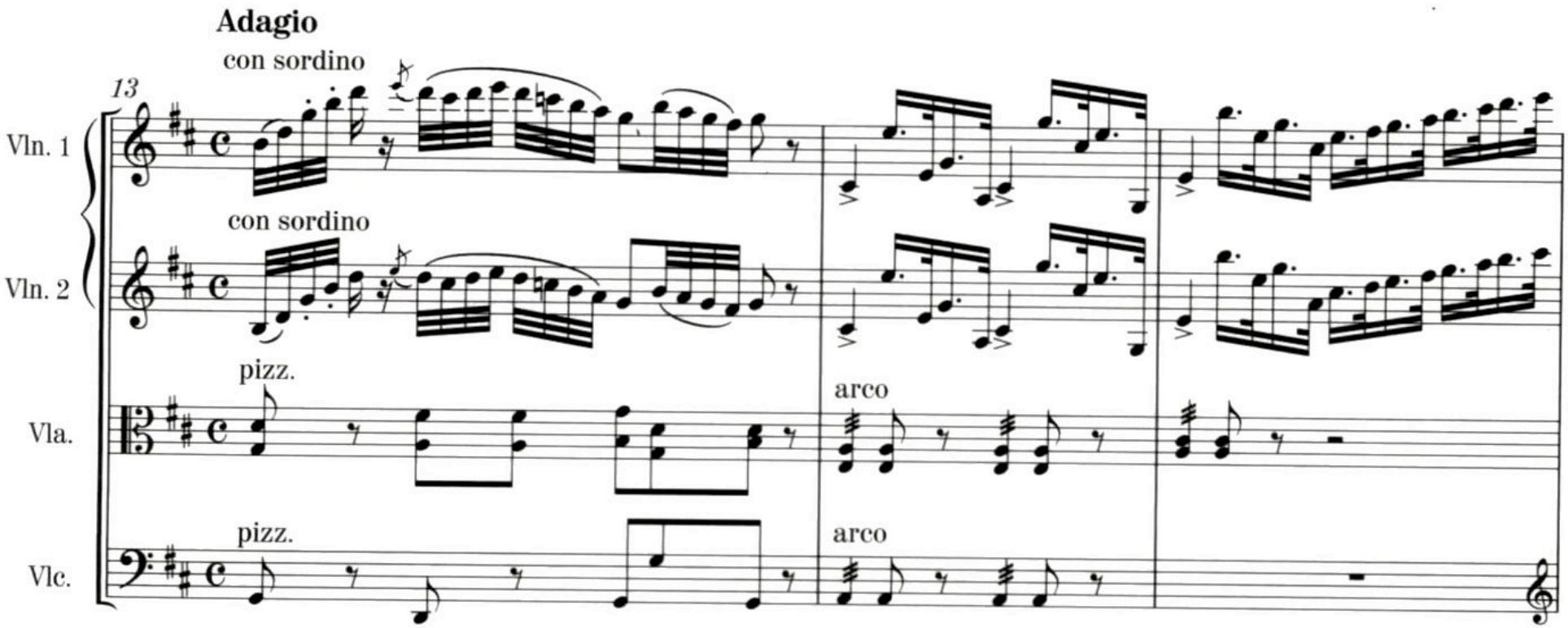
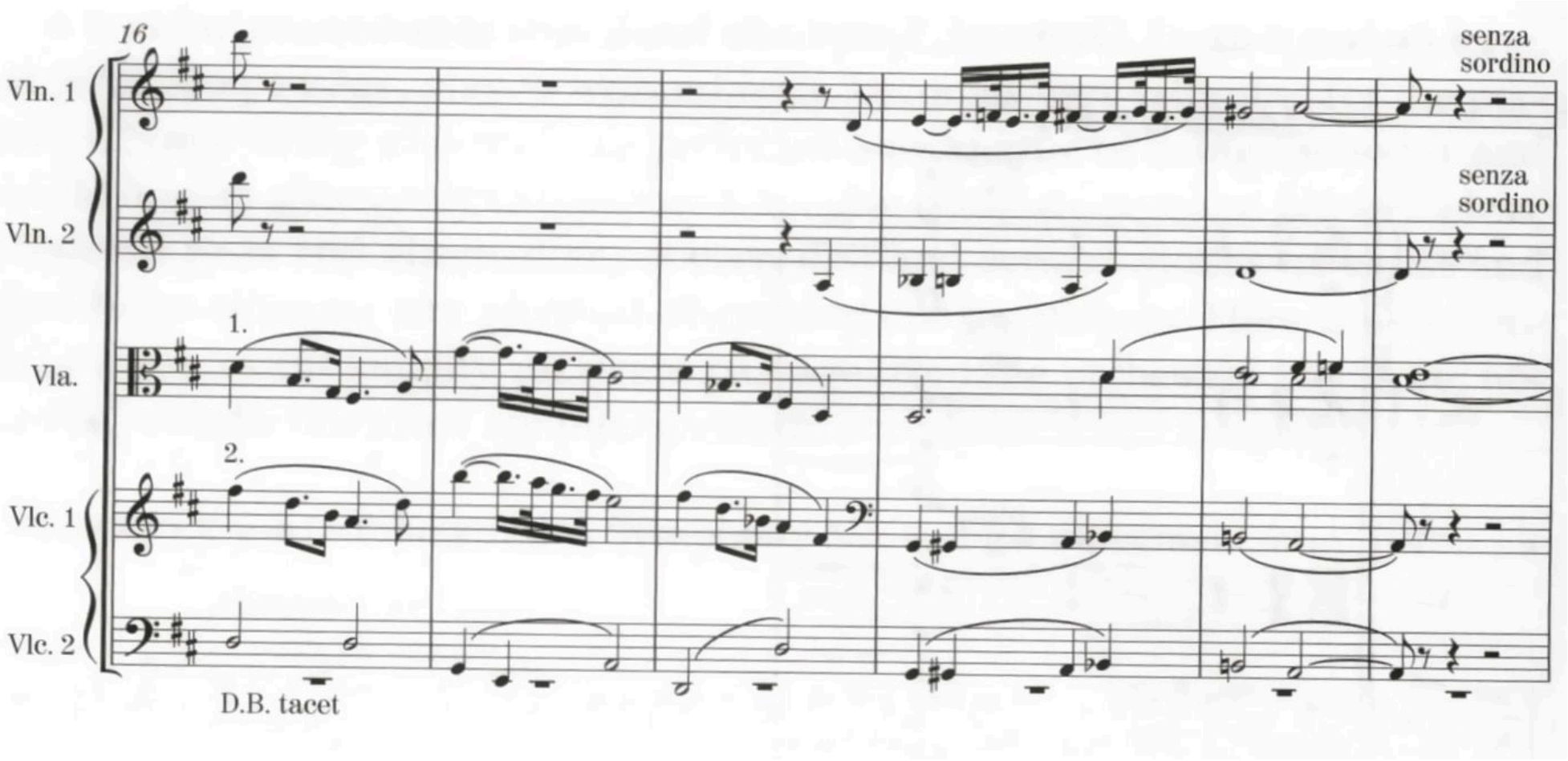
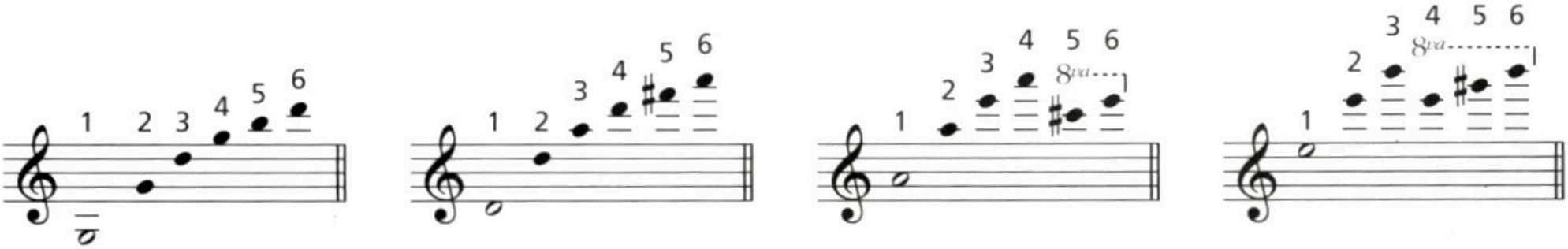
EXAMPLE 2-63. Weber, *Oberon*, Overture, mm. 13–21




16
Vln. 1
Vln. 2
Vla.
Vlc. 1
Vlc. 2
1.
2.
senza sordino
senza sordino
D.B. tacet

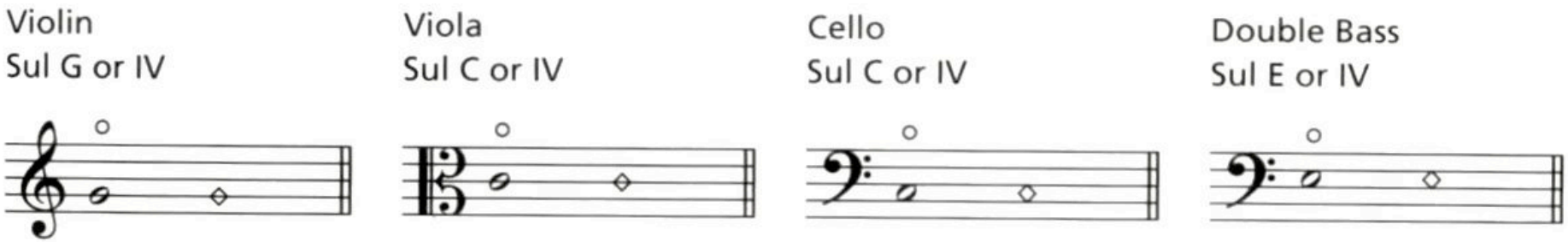
Sons produzidos com o apoio leve do dedo sobre a corda em pontos específicos gerando alturas correspondentes às da série harmônica com timbre diferenciado. Existem os harmônicos naturais e os harmônicos artificiais.

Harmônicos naturais



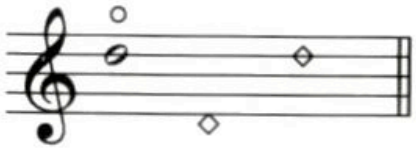
Fundamental | Fund. | Fund. | Fund.

SEGUNDO PARCIAL

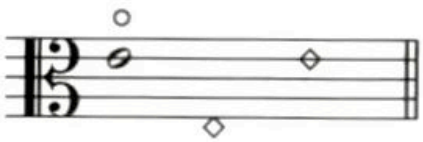


TERCEIRO PARCIAL

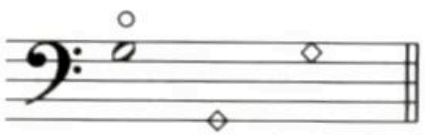
Violin
Sul G



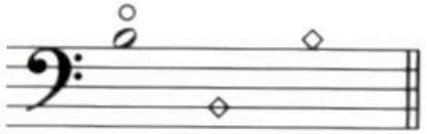
Viola
Sul C



Cello
Sul C

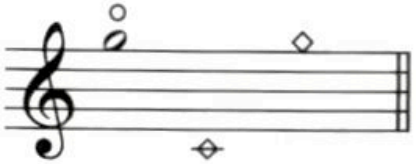


Double Bass
Sul E

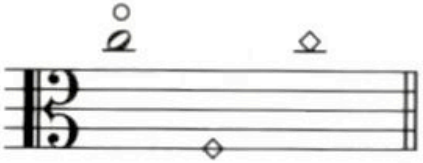


QUARTO PARCIAL

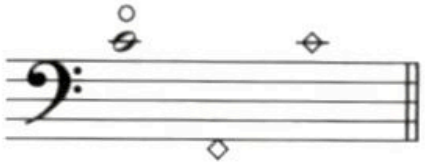
Violin
Sul G



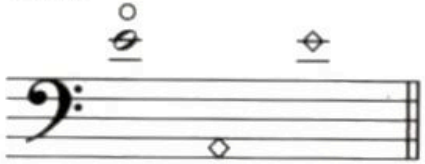
Viola
Sul C



Cello
Sul C

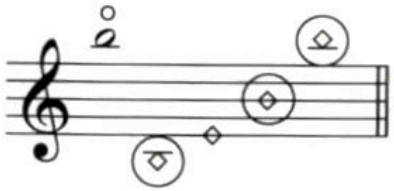


Double Bass
Sul E

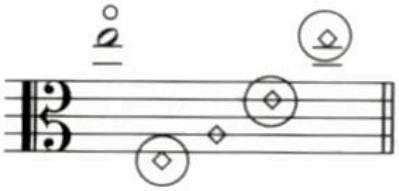


QUINTO PARCIAL

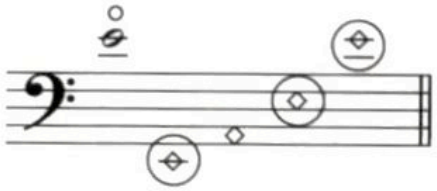
Violin
Sul G



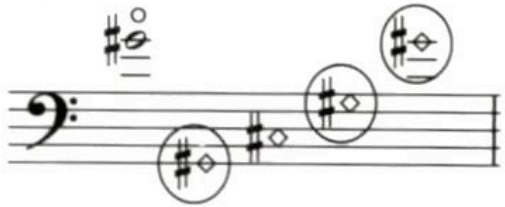
Viola
Sul C



Cello
Sul C



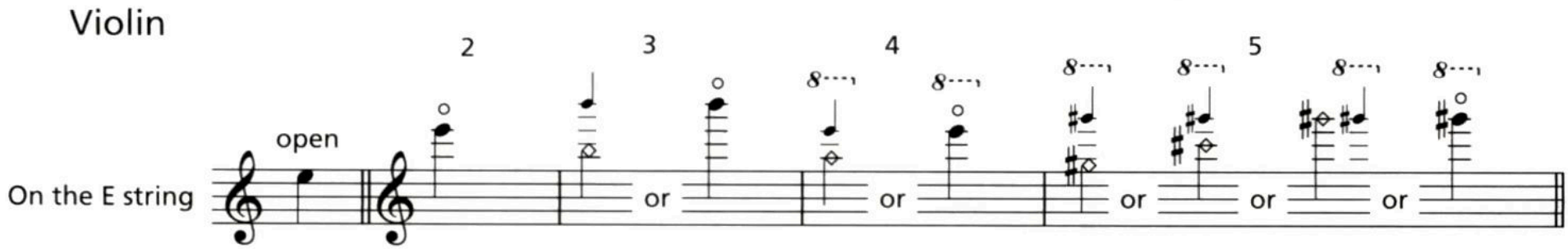
Double Bass
Sul E



Notação de harmônicos naturais

Existe duas maneiras de notar os harmônicos:

1) Escreve a nota na altura que o harmônico deve soar e adiciona-se um pequeno círculo acima da cabeça da nota;
2) Escreva nota em forma de losango no local do nodo onde vai originar o som harmônico (não indica precisamente a nota que vai soar).

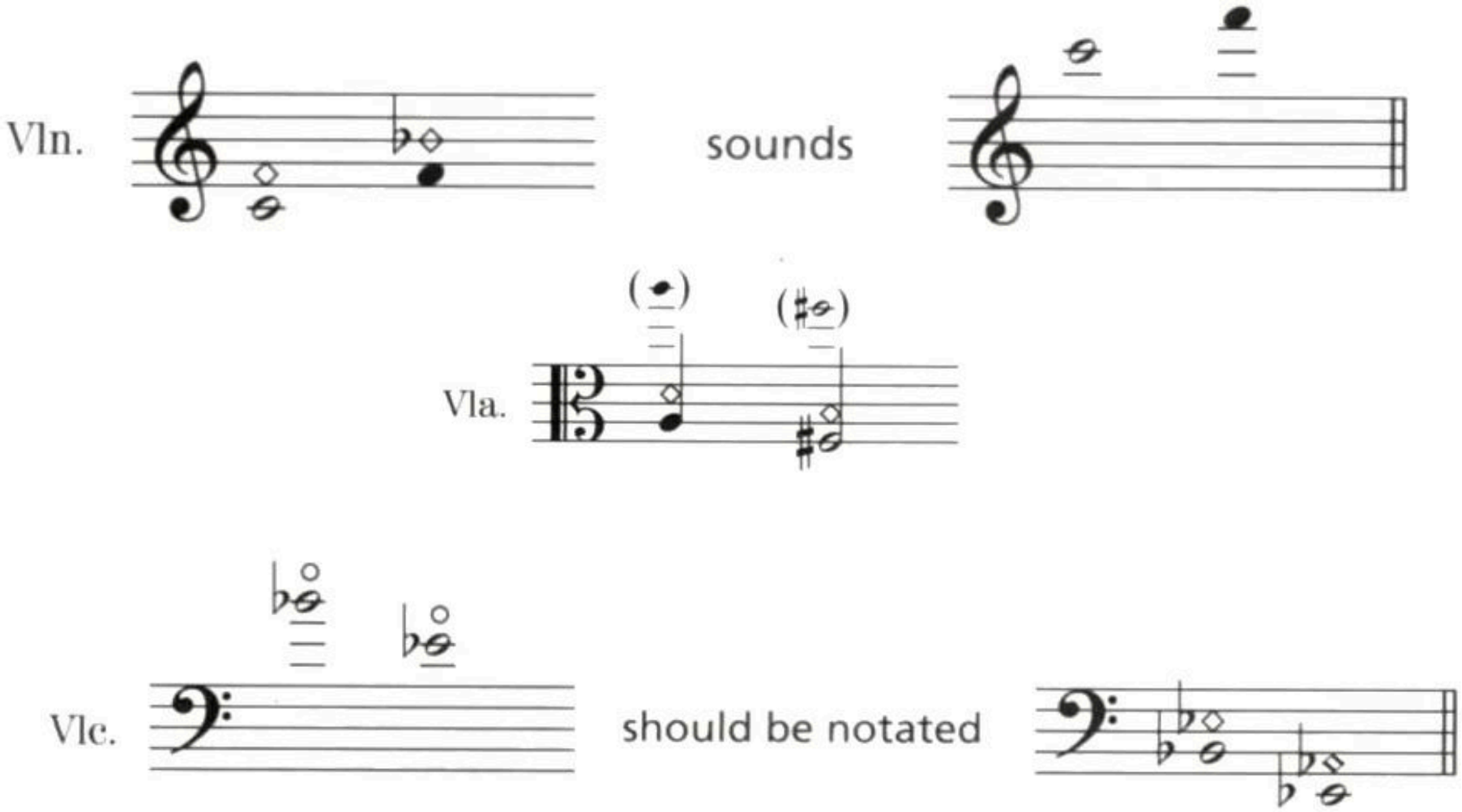


Confira o guia para harmônicos naturais para cada instrumento disponibilizado no blog.

Harmônicos artificiais

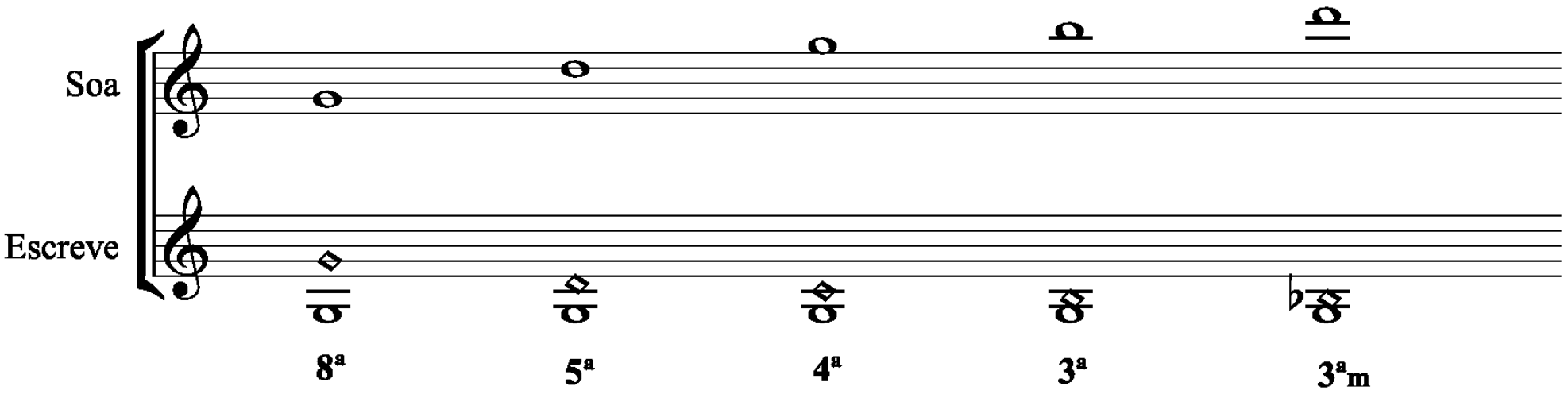
O músico utiliza dois dedos da mão esquerda para produzir os harmônicos em intervalos de terça, quarta e até quinta. São tranquilos de serem produzidos no violino e na viola. Os violoncelistas, em geral, utilizam o polegar para alcançar, no máximo uma quarta. Não é recomendado a utilização de harmônicos artificiais para o contrabaixo.

Notação de harmônicos artificiais

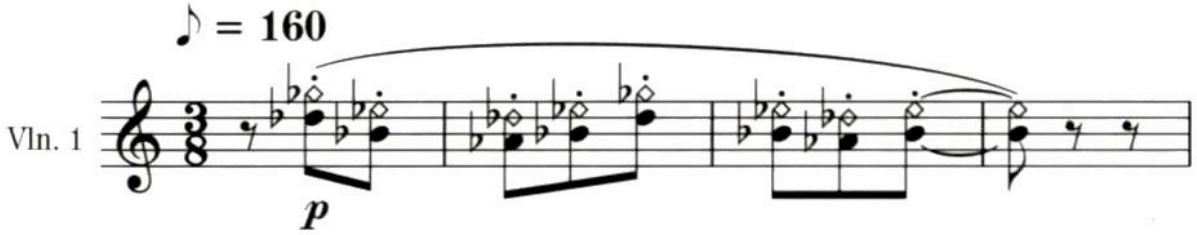


Última região onde são funcionais os harmônicos artificiais

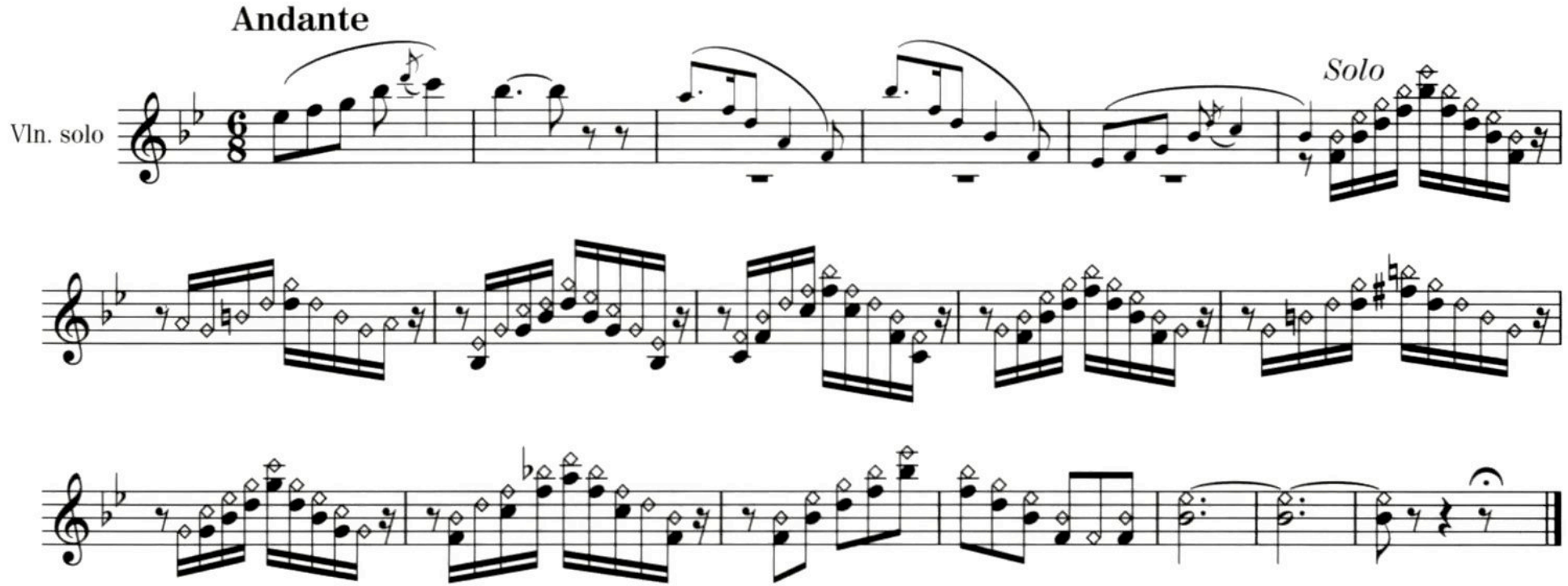
Cordas - Harmônicos Artificiais



EXAMPLE 2-78. Debussy, *Ibéria*, part 1, at 15



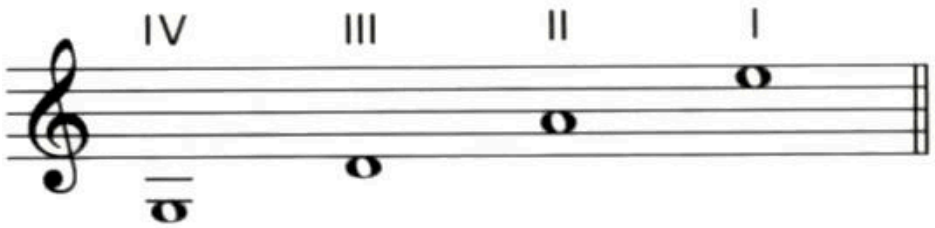
EXAMPLE 2-77. Saint-Saëns, Violin Concerto, second movement, end (last 13 mm. only heard on recording)



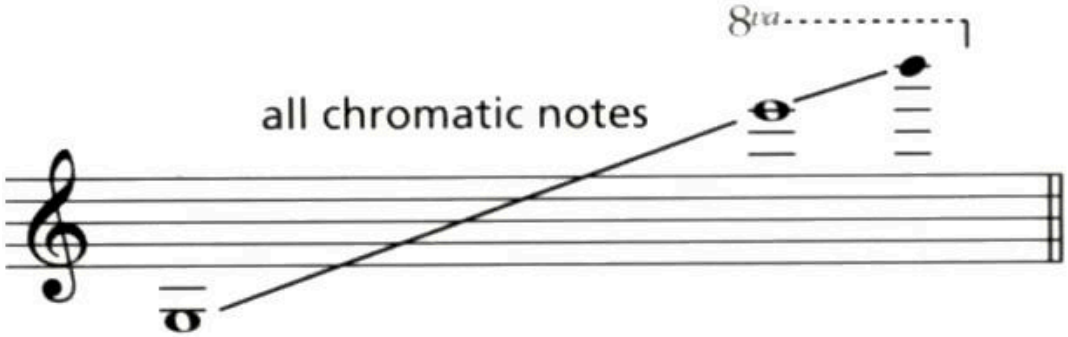
Aspectos individuais

Violino

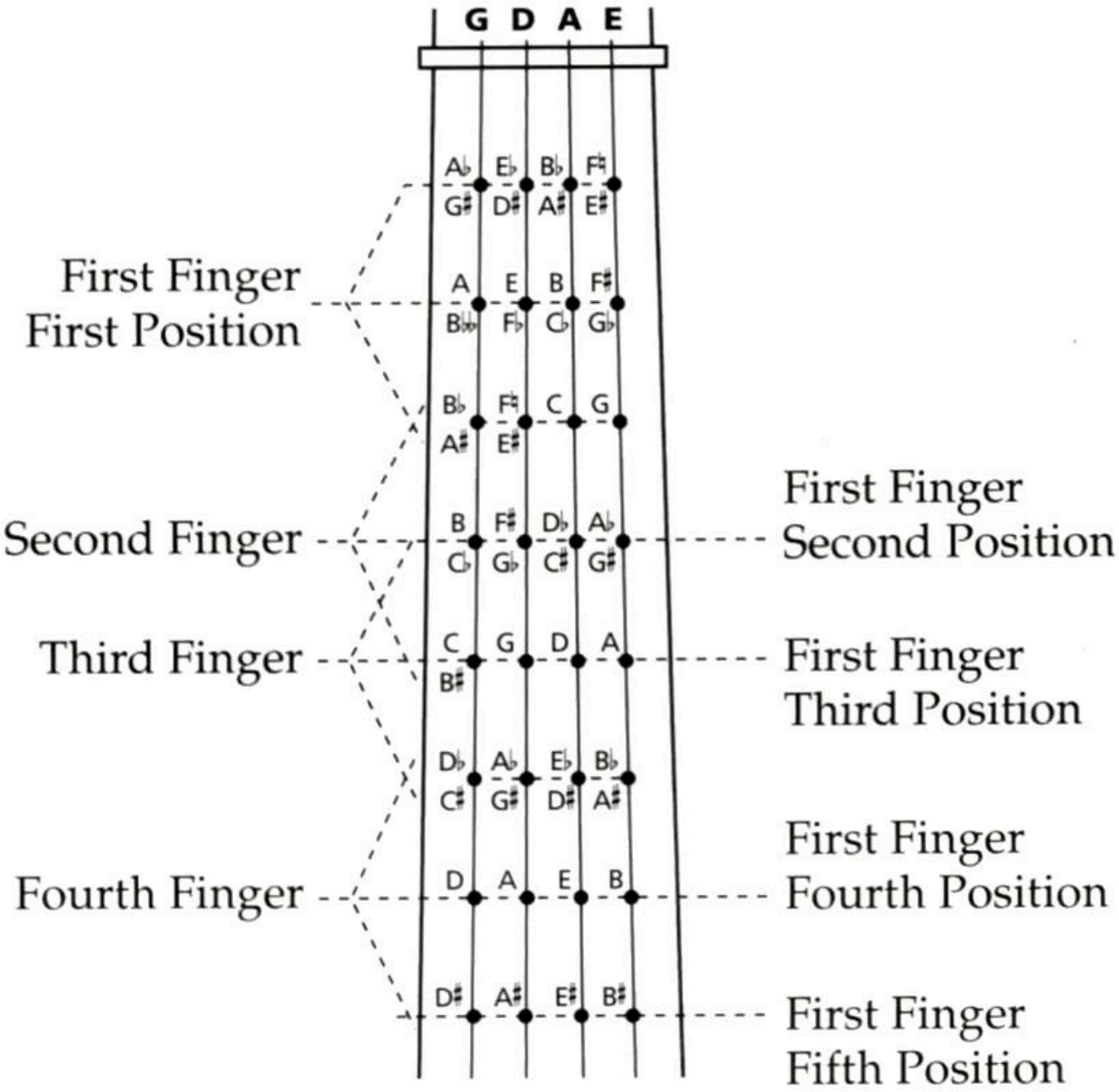
AFINAÇÃO



TESSITURA

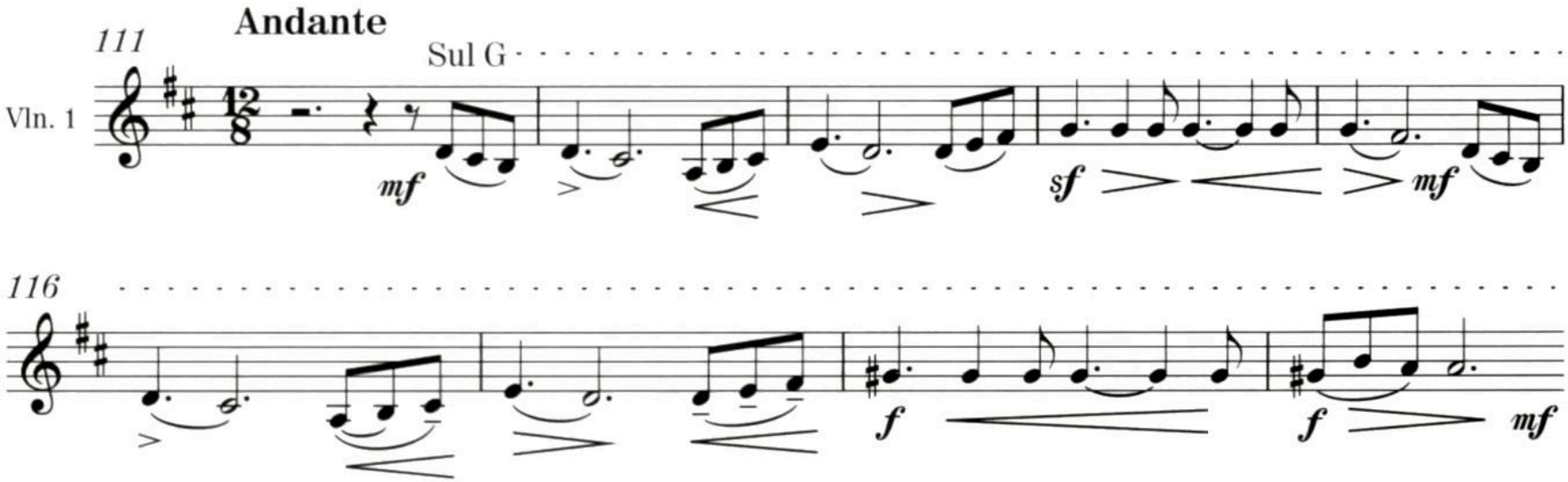


DEDILHADO


G D A E
First Finger
First Position
Second Finger
Third Finger
Fourth Finger
First Finger
Second Position
First Finger
Third Position
First Finger
Fourth Position
First Finger
Fifth Position

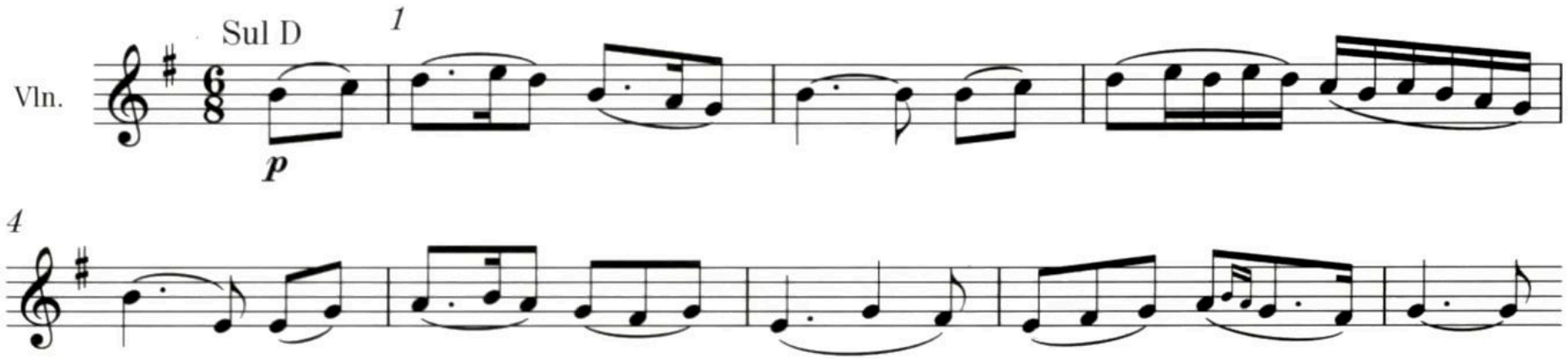
PASSAGENS TOCADAS EM UMA ÚNICA CORDA

EXAMPLE 3-5. Tchaikovsky, Symphony No. 5, second movement, mm. 111–119



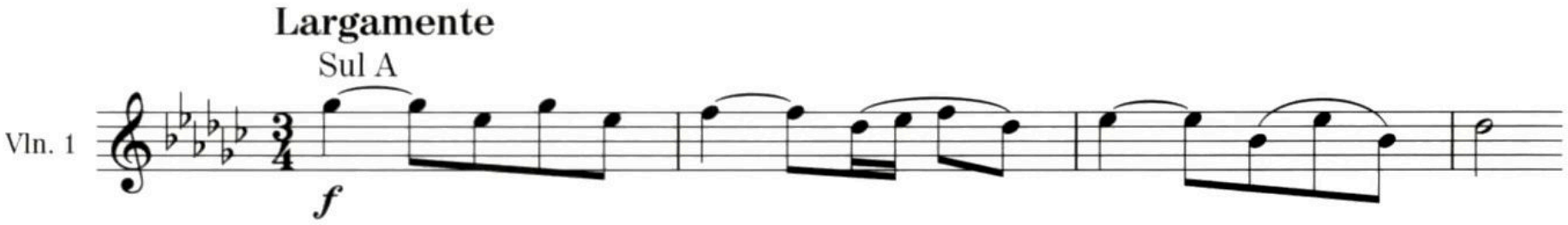
PASSAGENS TOCADAS EM UMA ÚNICA CORDA

EXAMPLE 3-6. Rimsky-Korsakov, *Sheherazade*, third movement, mm. 1–8



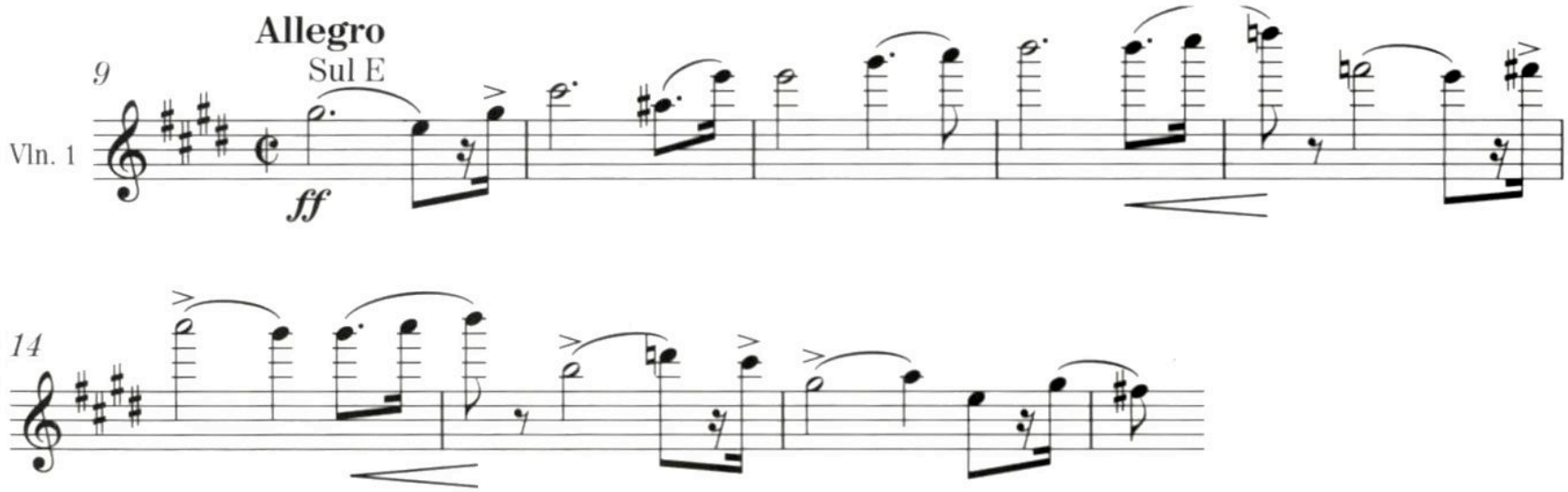
PASSAGENS TOCADAS EM UMA ÚNICA CORDA

EXAMPLE 3-7. Puccini, *Madama Butterfly*, Act II, at 16

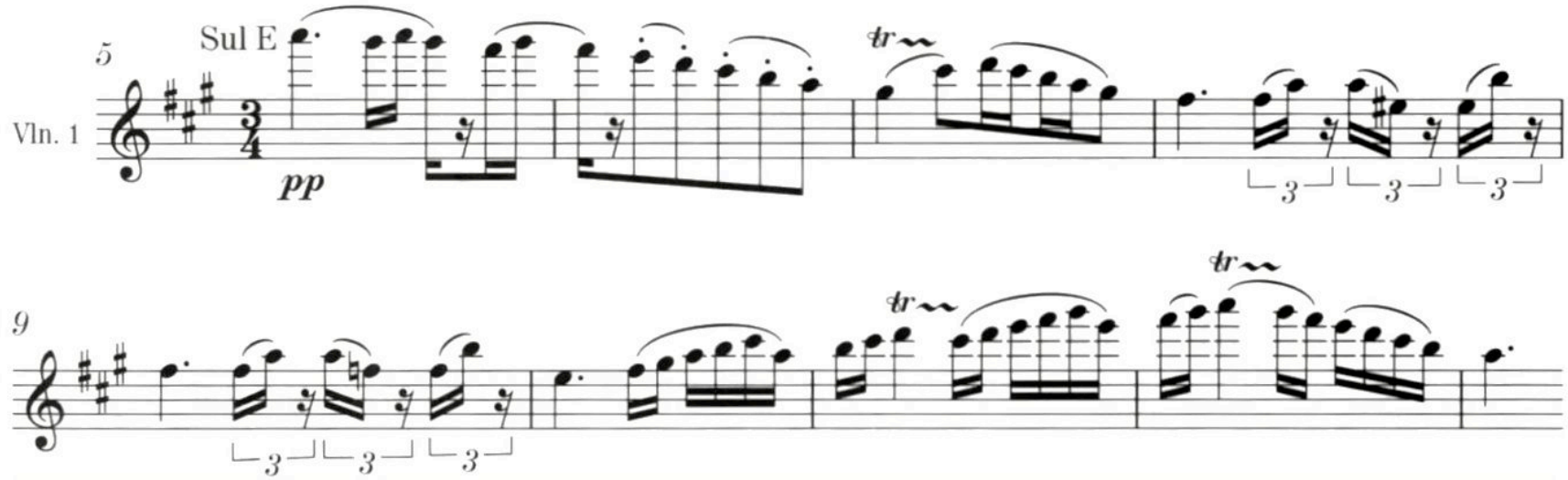


PASSAGENS TOCADAS EM UMA ÚNICA CORDA

EXAMPLE 3-8. R. Strauss, *Don Juan*, mm. 9–17

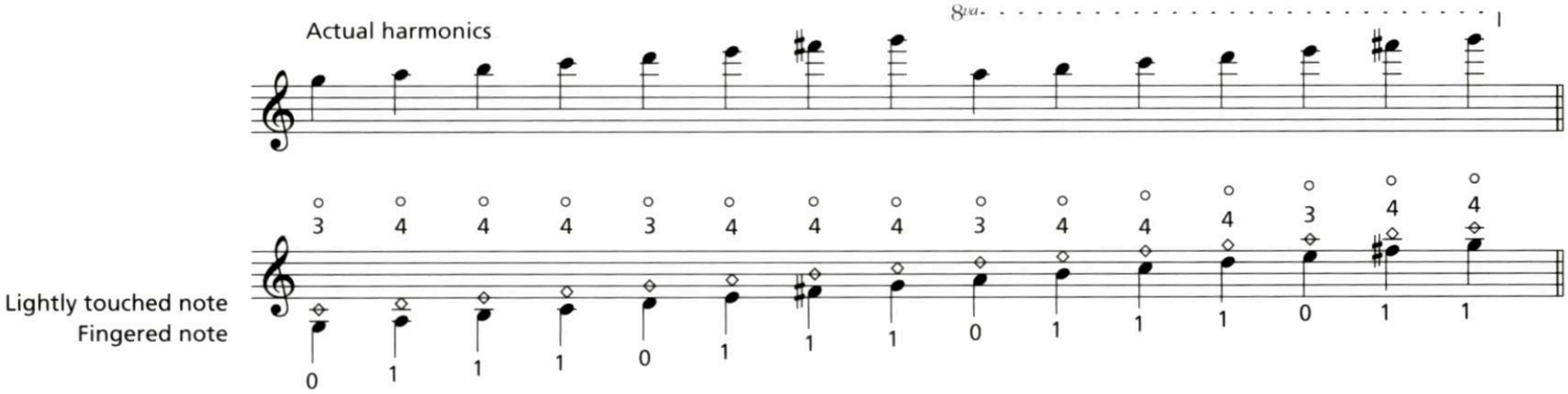


EXAMPLE 3-9. Prokofiev, *Classical Symphony*, second movement, mm. 5–13

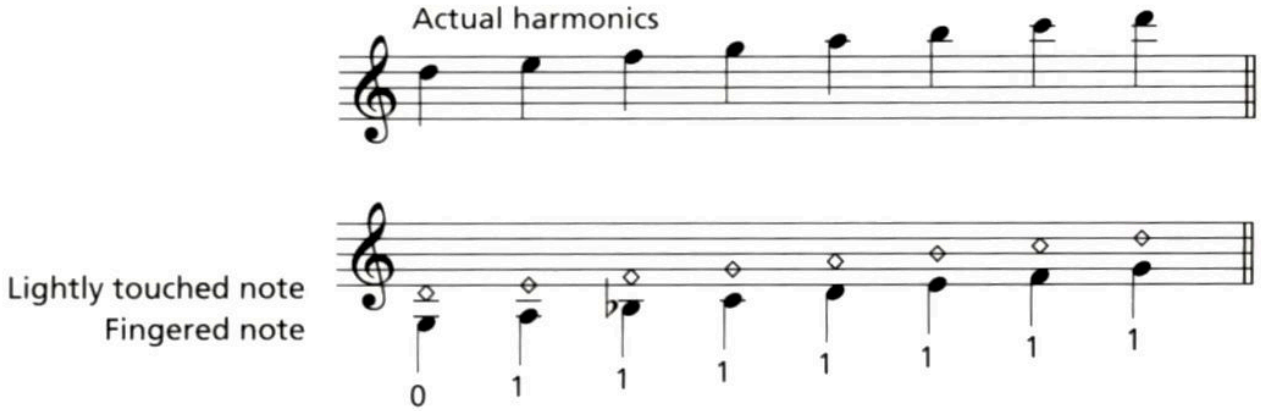


HARMÔNICOS

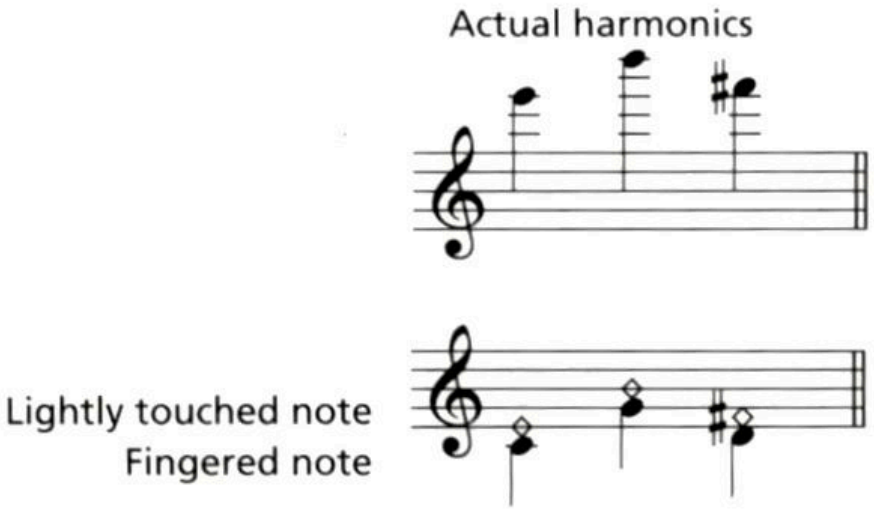
QUARTA



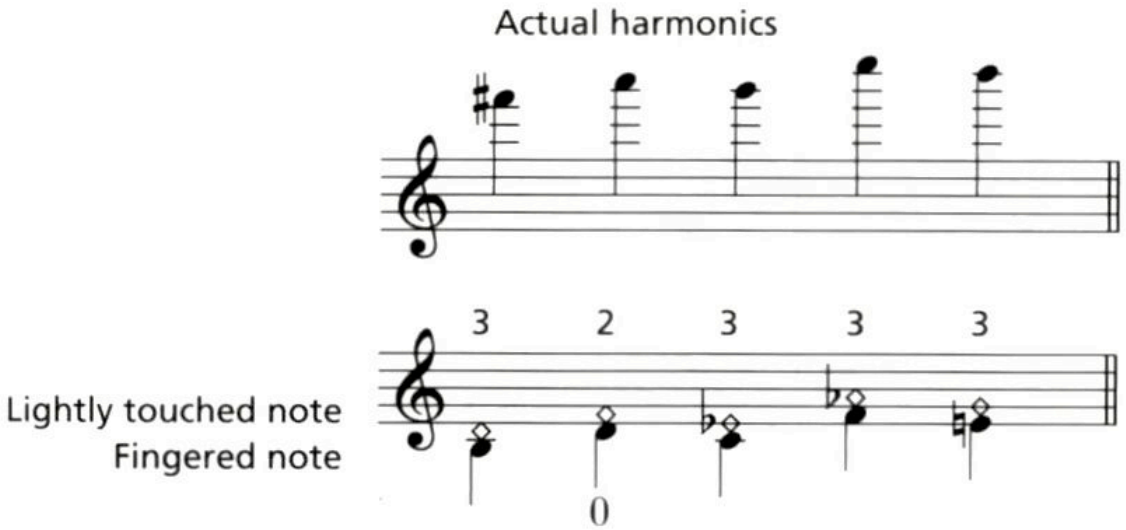
QUINTA



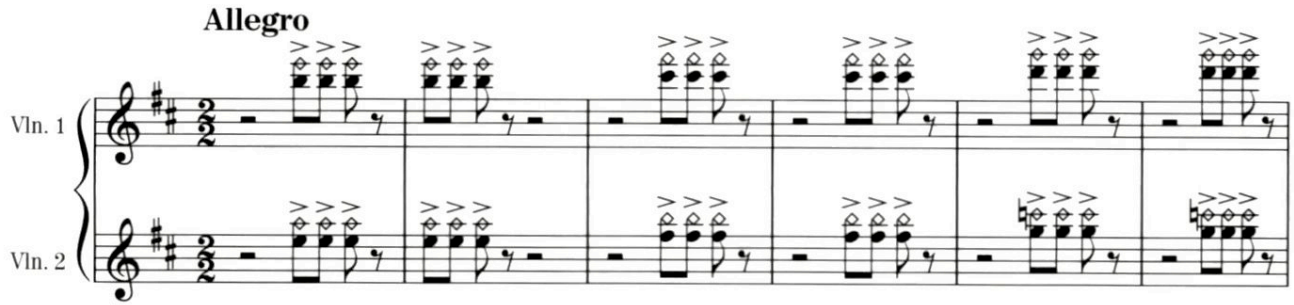
TERÇA MAIOR



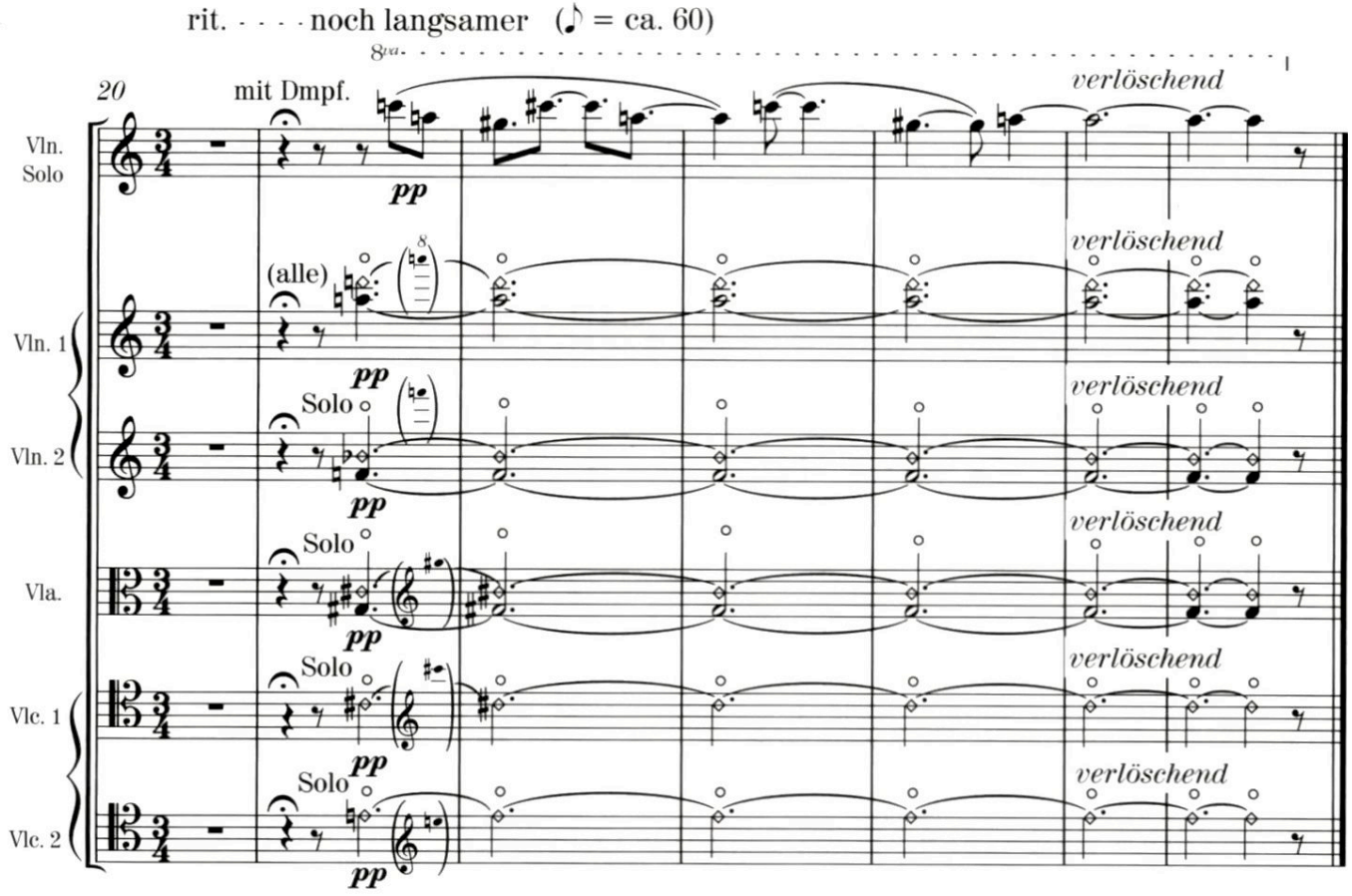
TERÇA MENOR



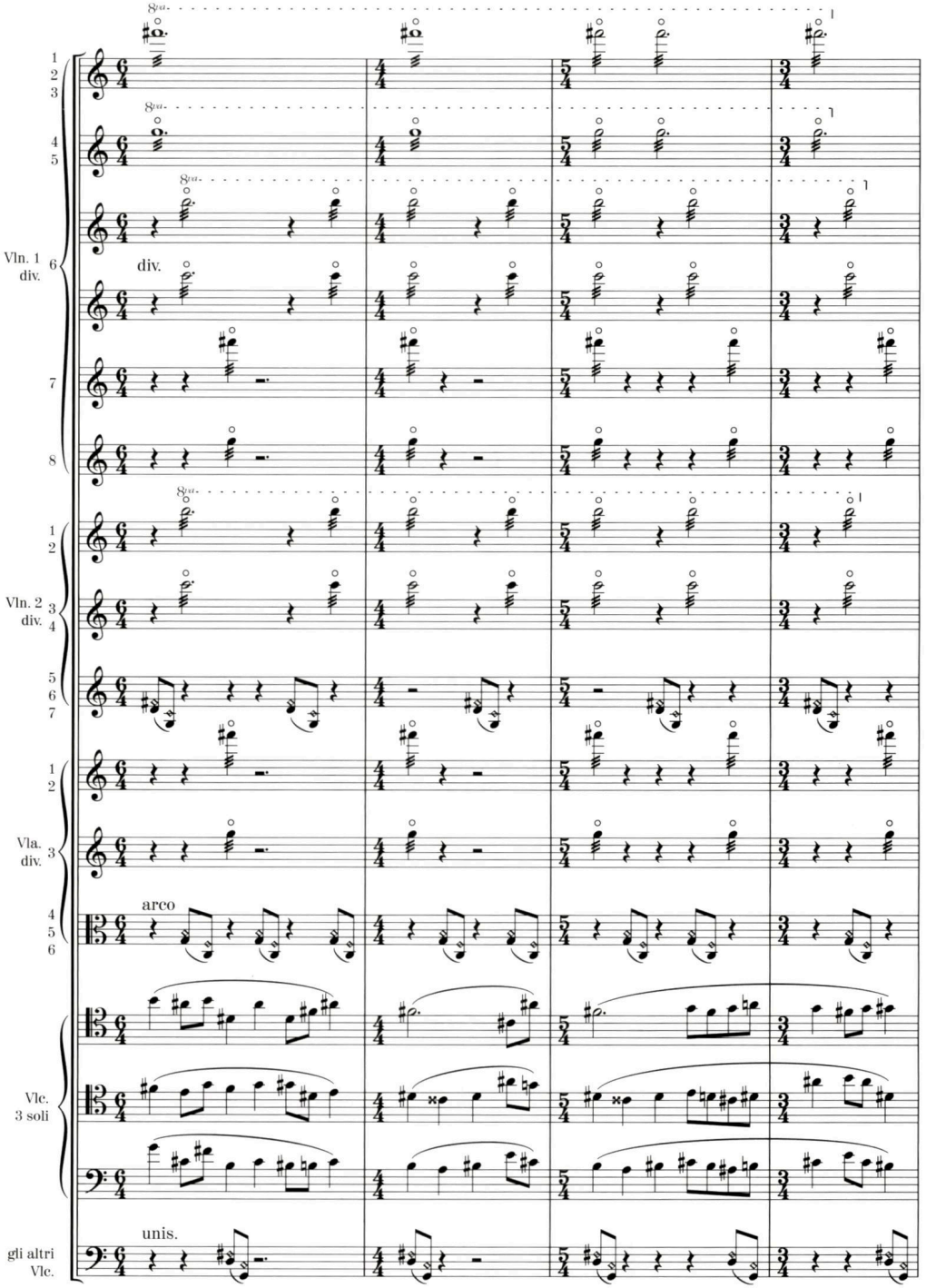
EXAMPLE 3-18. Copland, Symphony No. 3, fourth movement, 3–8 mm. after 128



EXAMPLE 3-19. Webern, Six Pieces for Orchestra, Op. 6, No. 5, mm. 20–26 (strings only)



EXAMPLE 3-20. Stravinsky, *Le Sacre du printemps*, at 101 (strings only)



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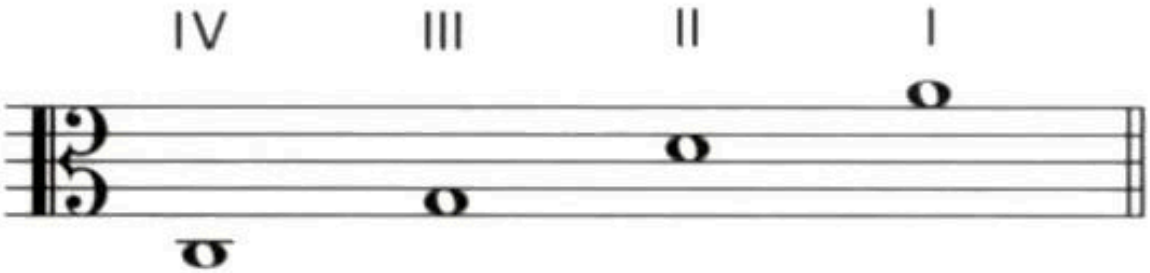
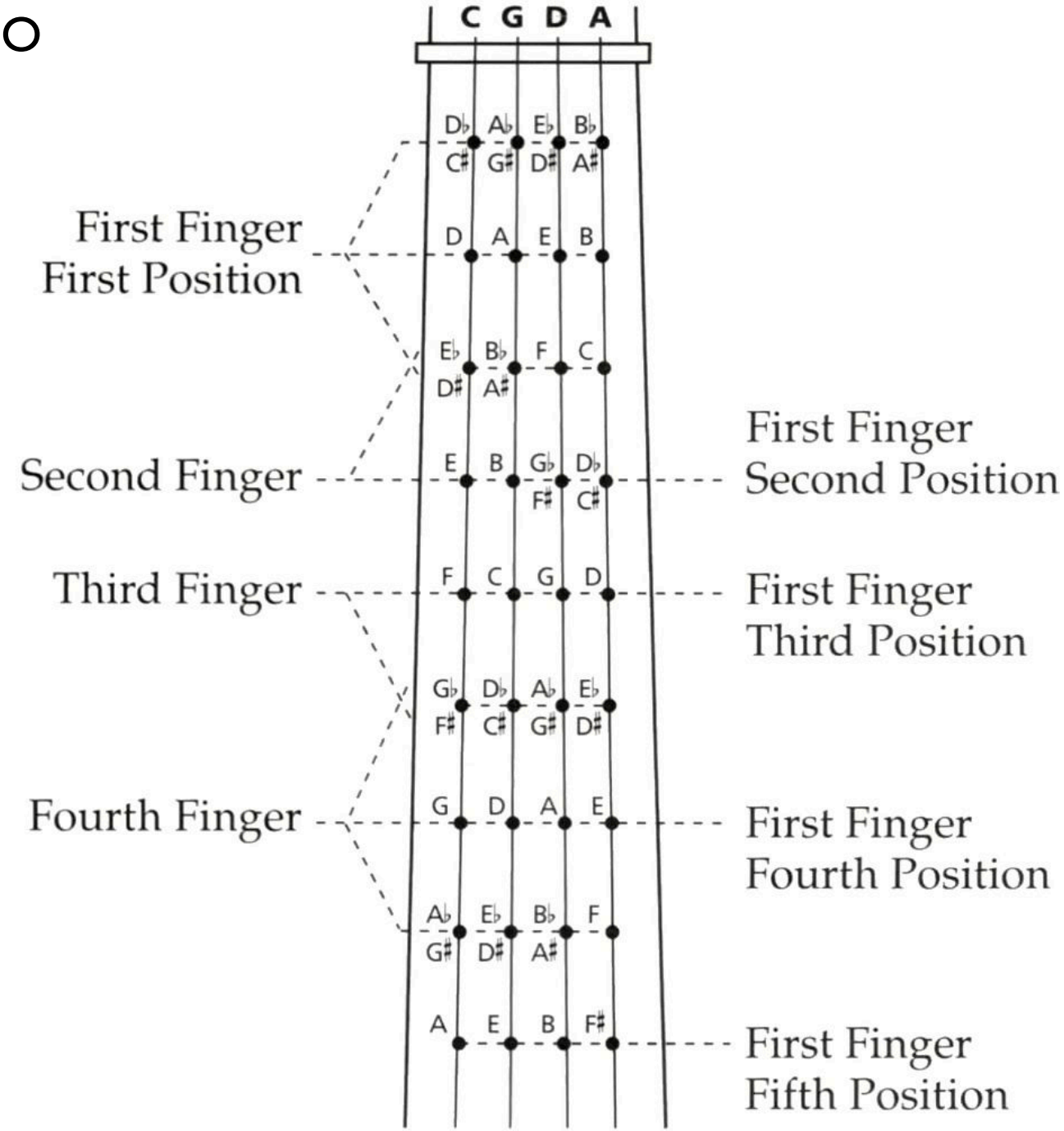
Viola

AFINAÇÃO



TESSITURA

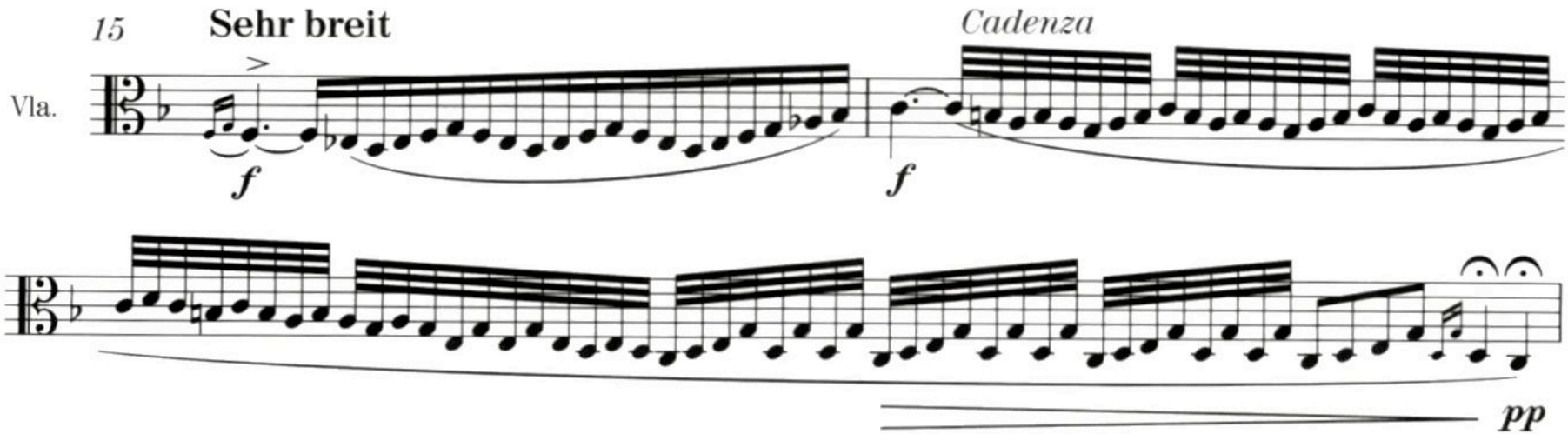
DEDILHADO



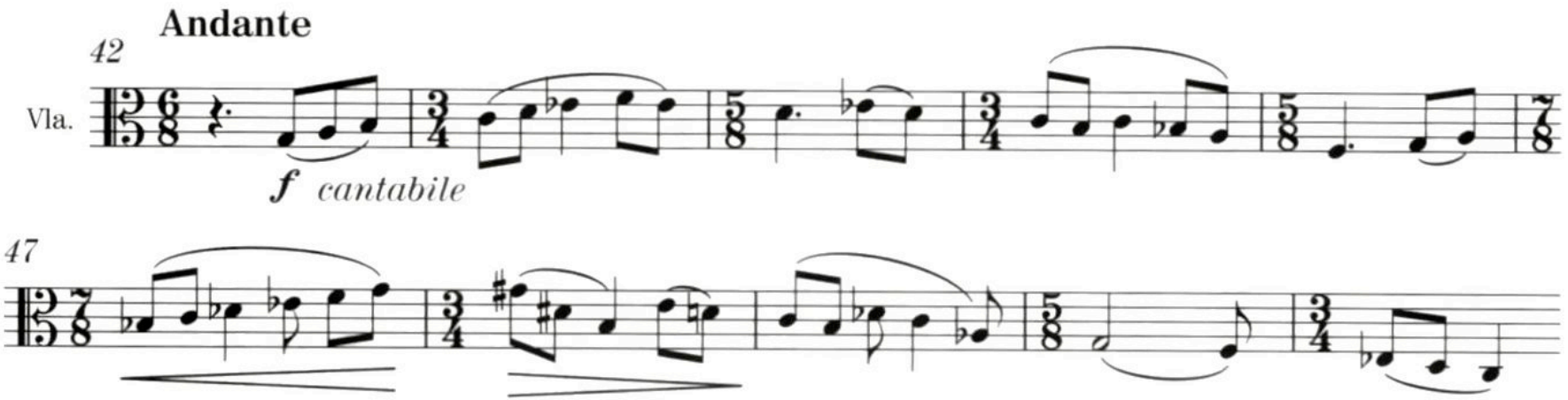
PROF. MARCOS FILHO

PASSAGENS TOCADAS EM UMA ÚNICA CORDA

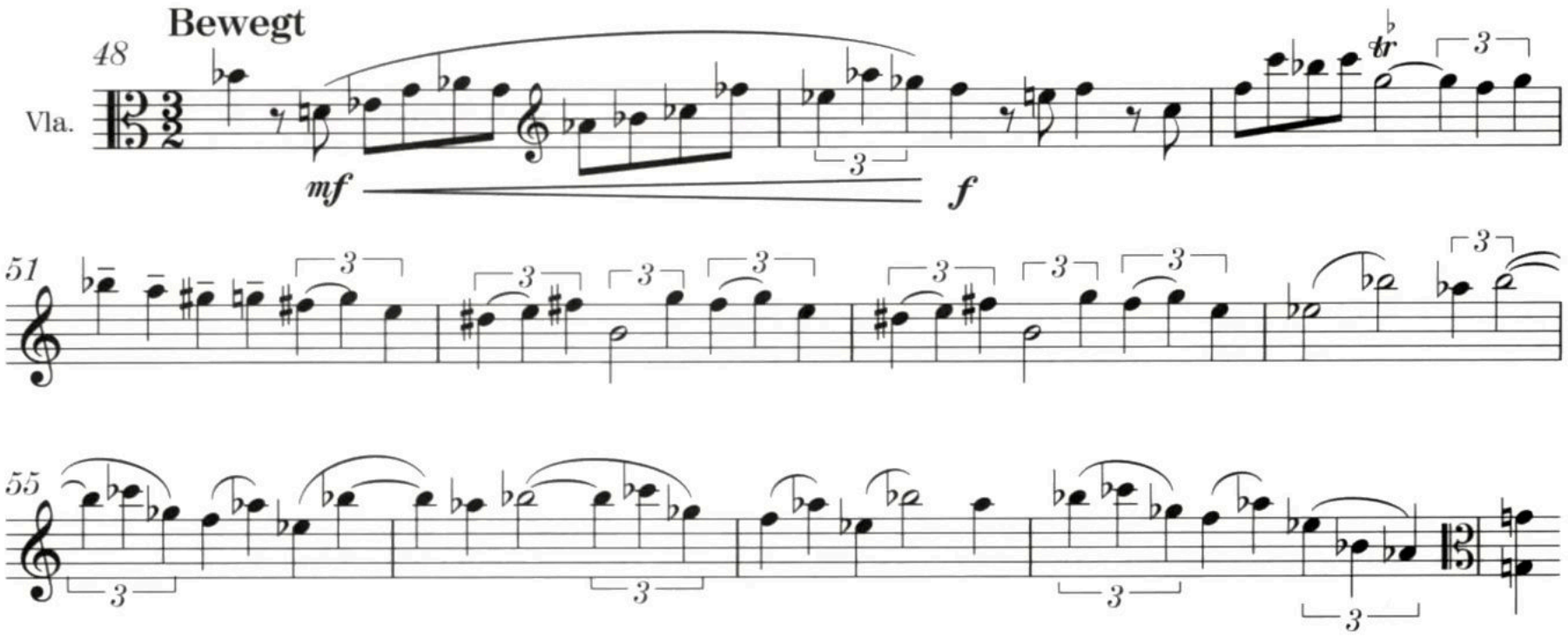
EXAMPLE 3-31. Hindemith, Sonata, Op. 11, No. 4, first movement, mm. 15–16



EXAMPLE 3-32. Bartók, Concerto for Orchestra, fourth movement, mm. 42–51

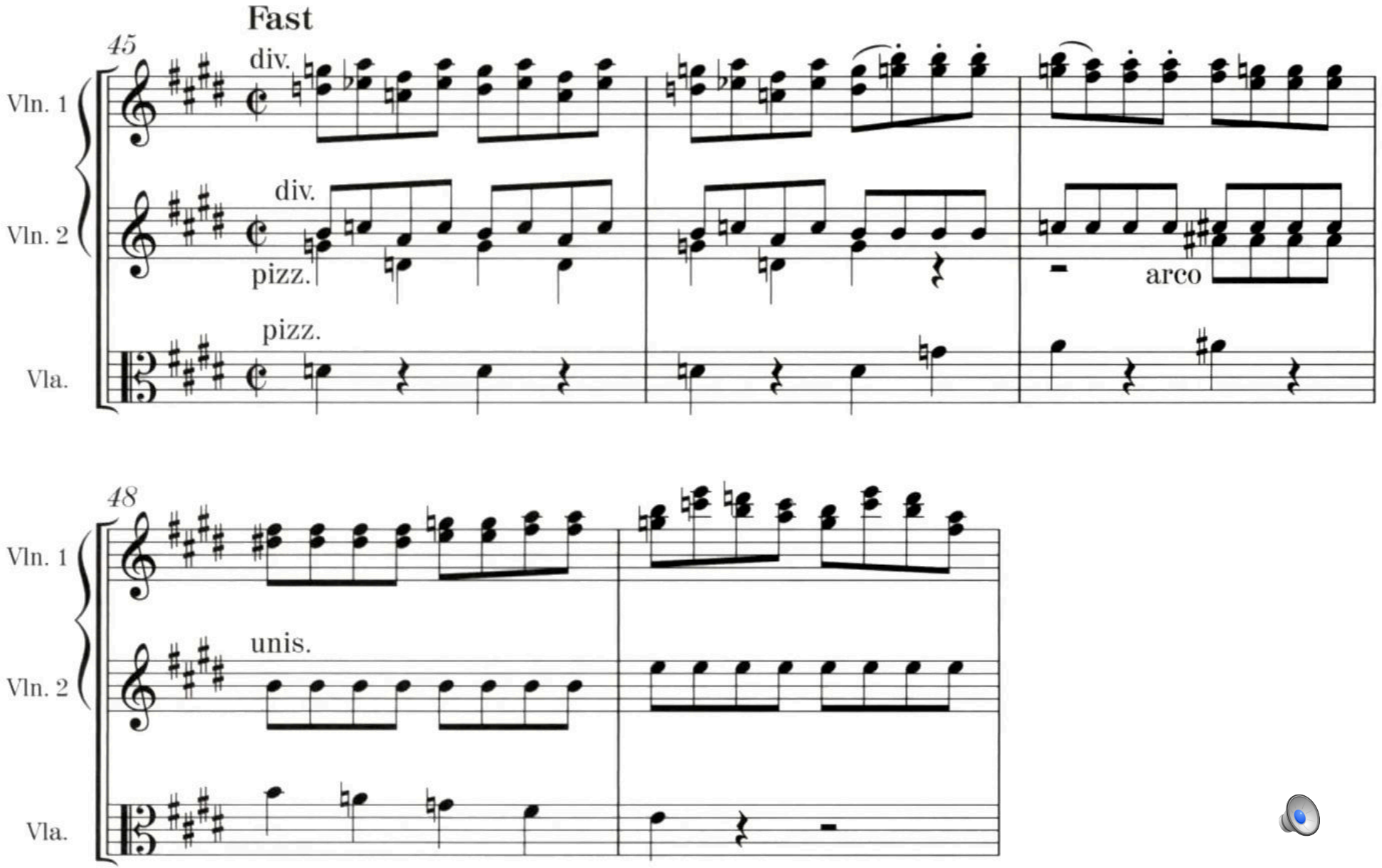


EXAMPLE 3-33. Hindemith, *Der Schwanendreher*, first movement, mm. 48–59

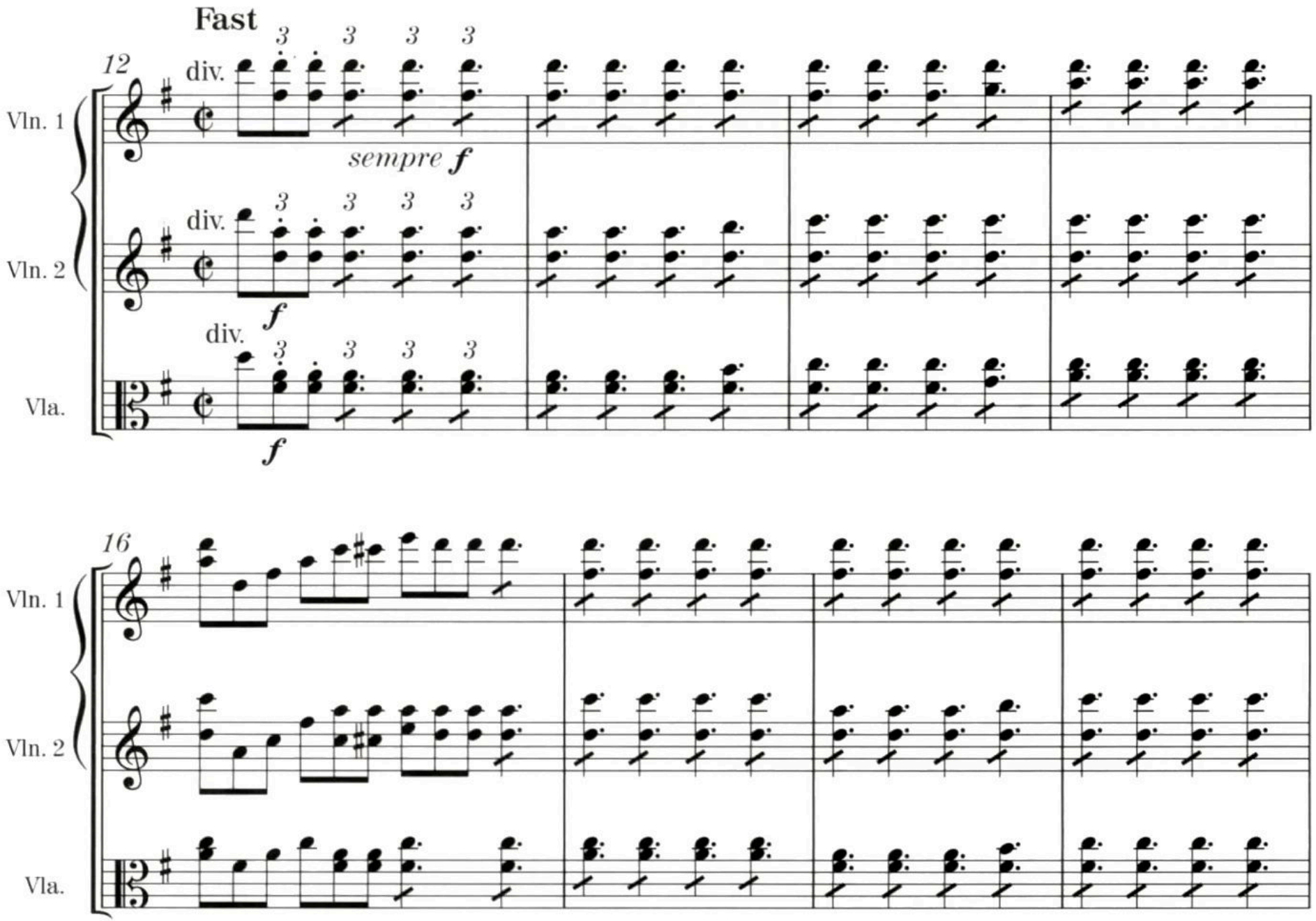


Corda A

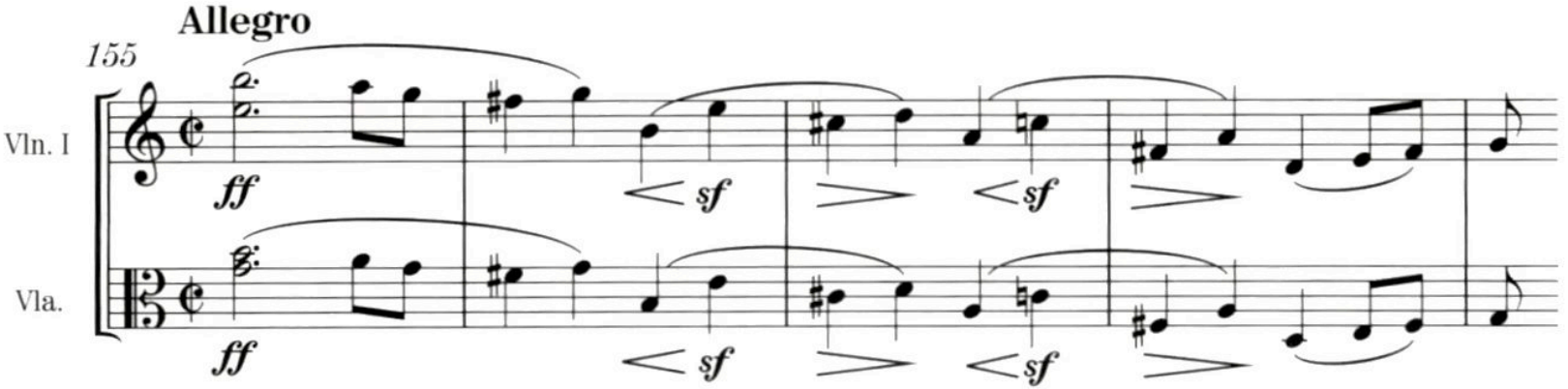
EXAMPLE 3-37. Mendelssohn, *A Midsummer Night's Dream*, Overture, mm. 45–49



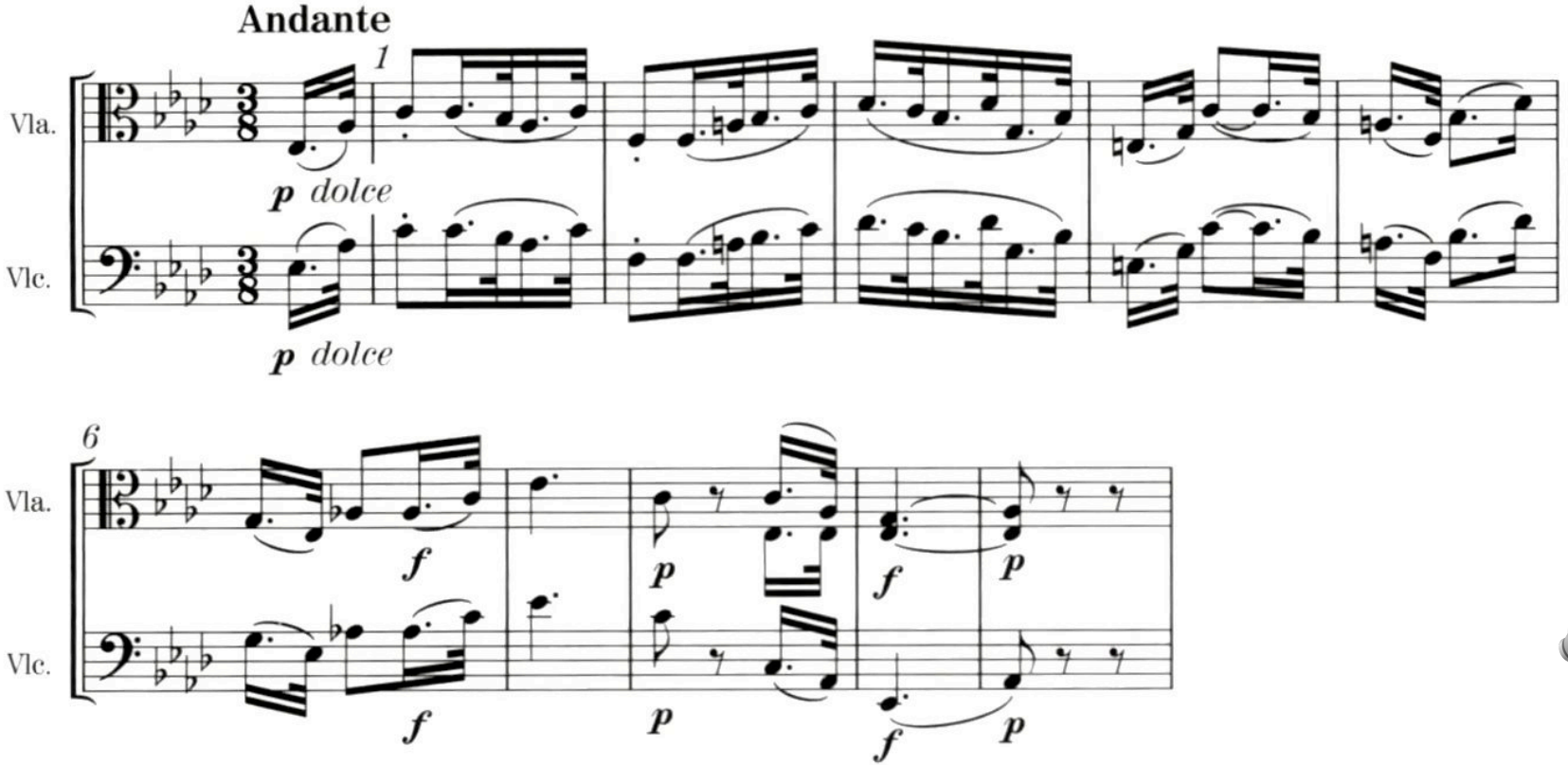
EXAMPLE 3-38. Wagner, *Lohengrin*, Act III, "In fernen Land," mm. 12–19



EXAMPLE 3-39. Berlioz, *Symphonie fantastique*, first movement, mm. 155–159

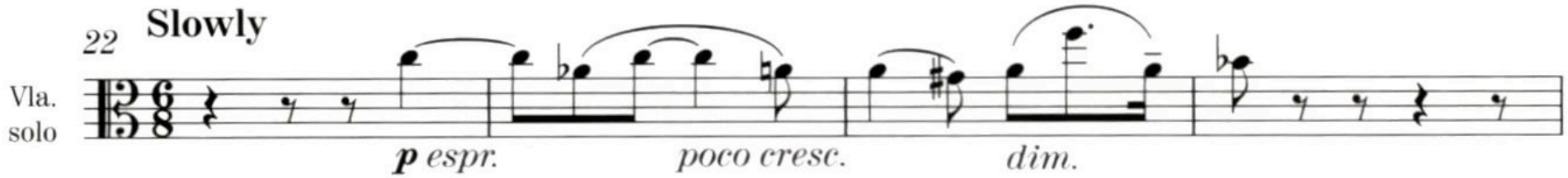


EXAMPLE 3-40. Beethoven, Symphony No. 5, second movement, mm. 1–10

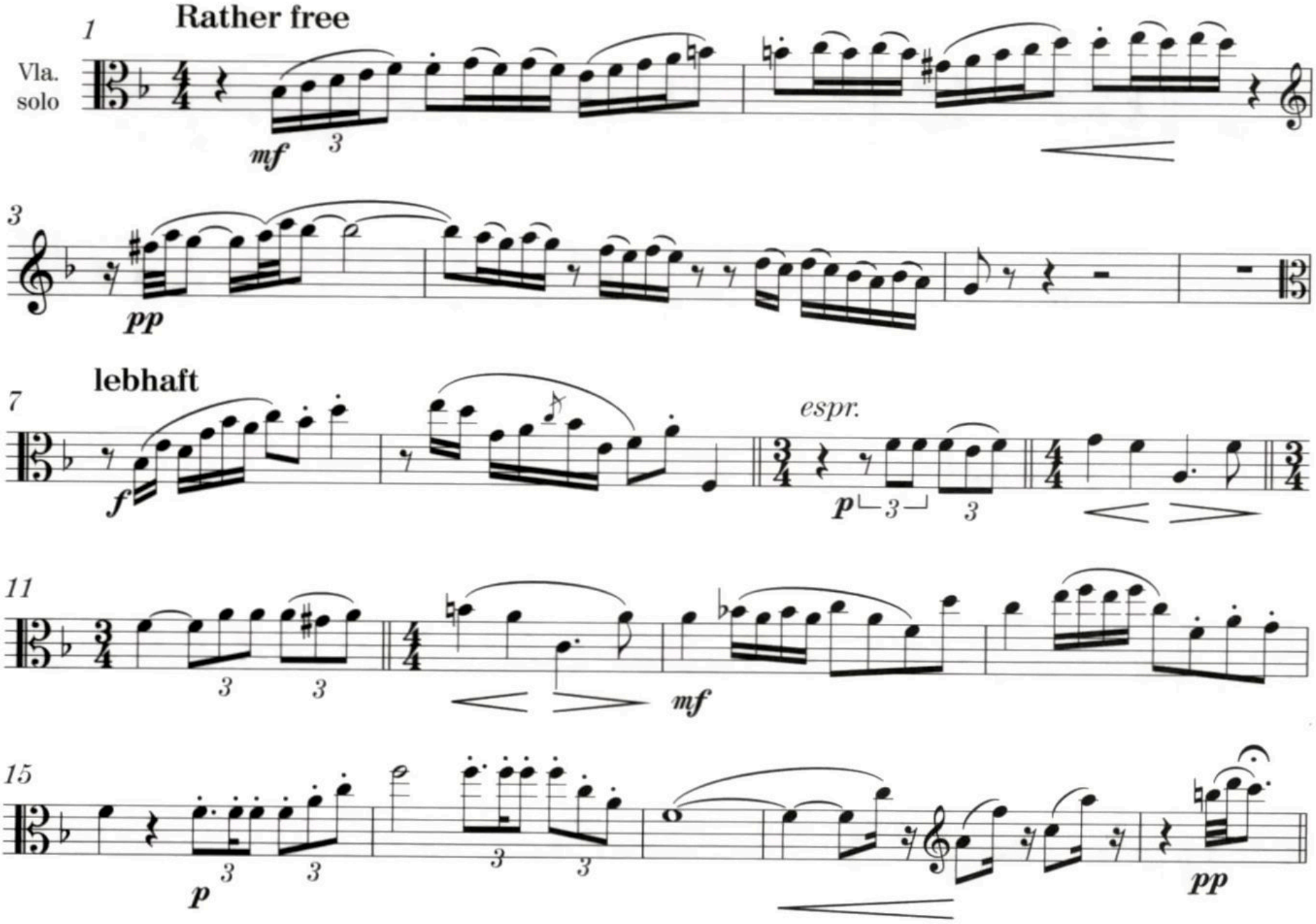


PROF. MARCOS FILHO

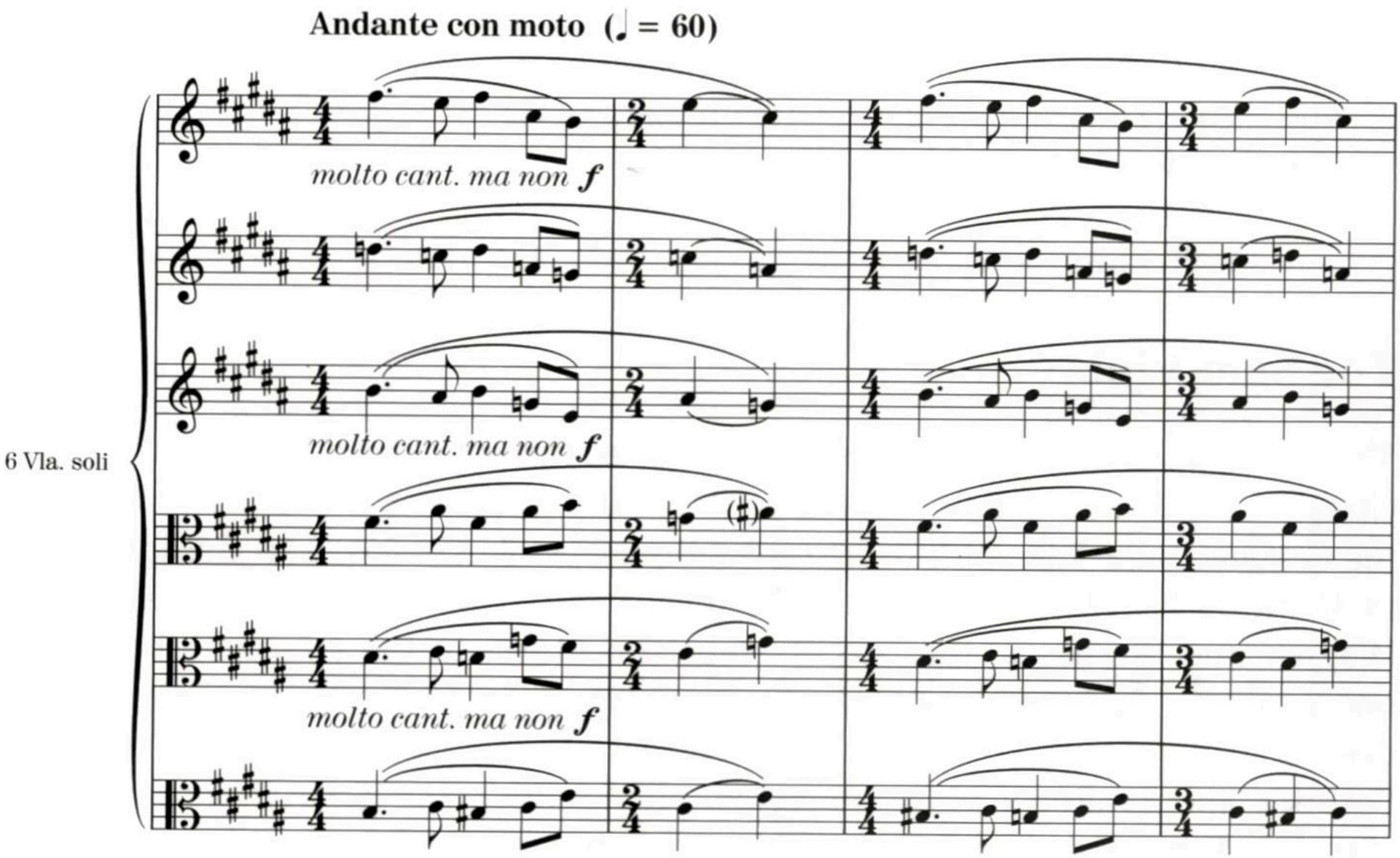
EXAMPLE 3-41. Scriabin, *Poem of Ecstasy*, mm. 22–25



EXAMPLE 3-42. R. Strauss, *Don Quixote*, Variation 2, Vivace, mm. 1–19

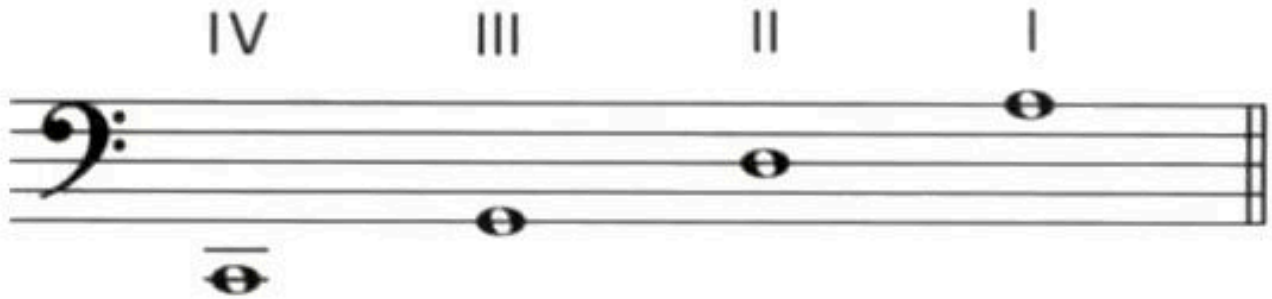


EXAMPLE 3-43. Stravinsky, *Le Sacre du printemps*, "Cercles mystérieux des adolescentes," at 91

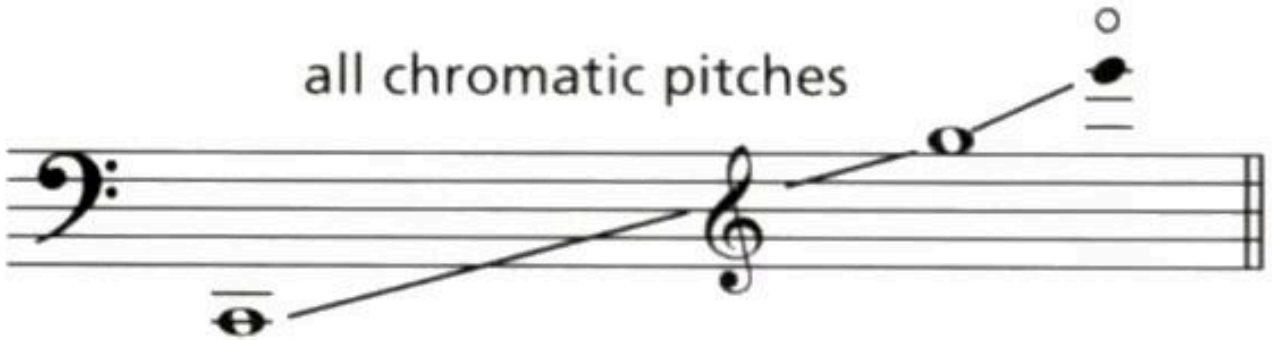


Violoncelo

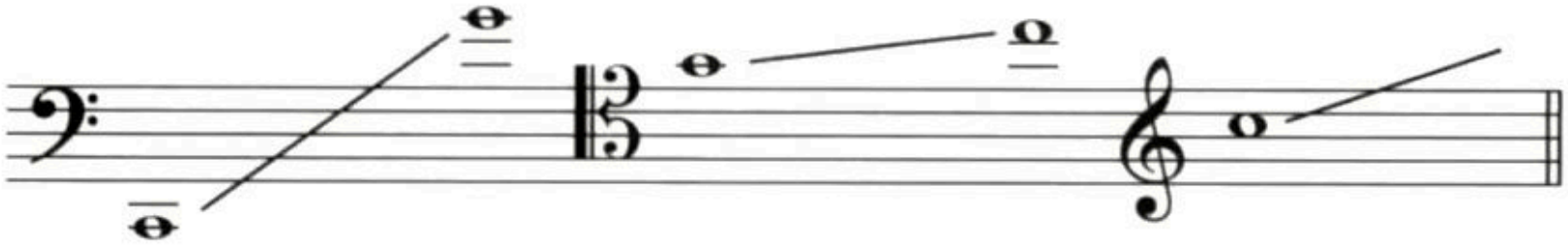
AFINAÇÃO



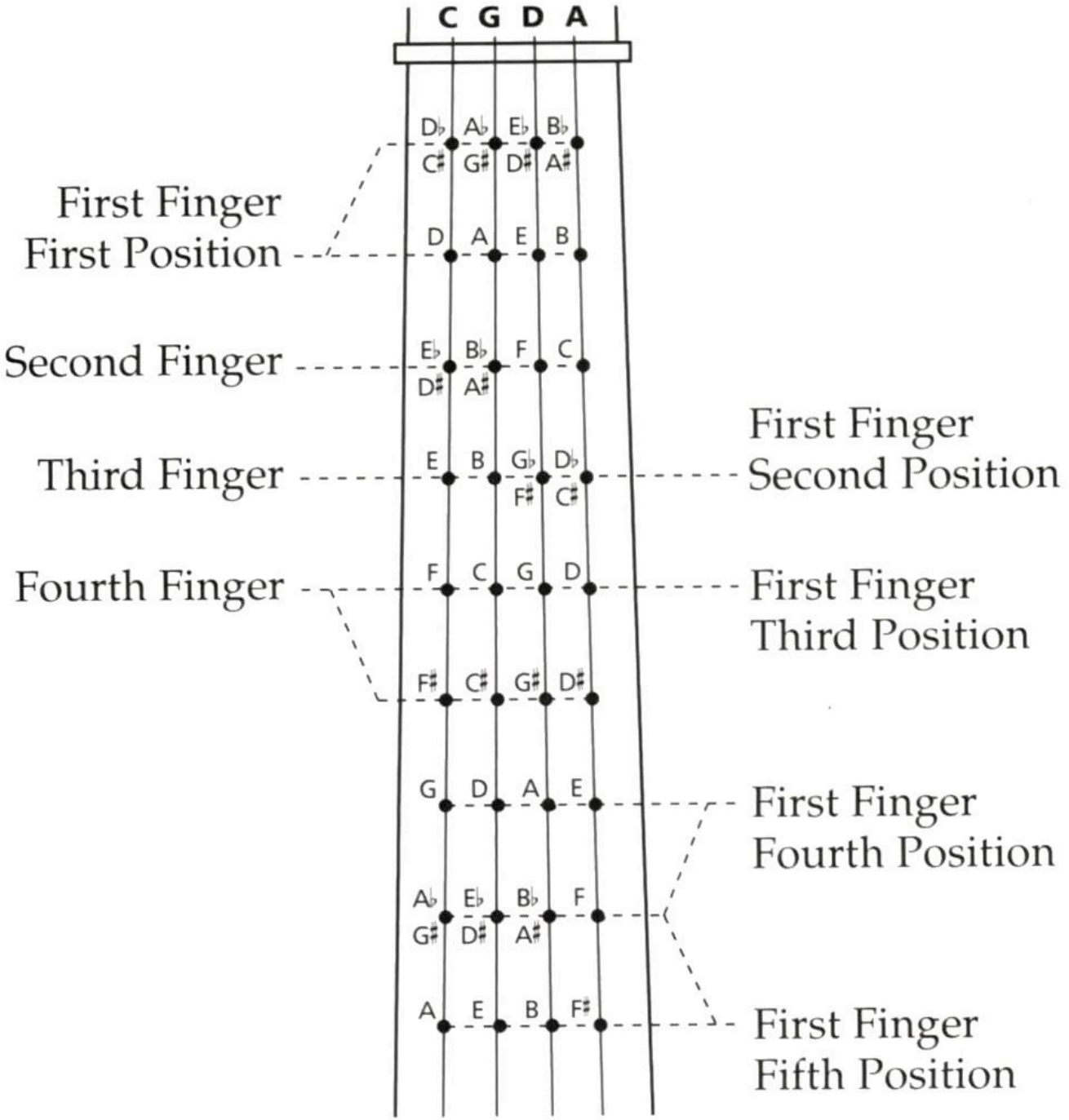
TESSITURA



CLAVES

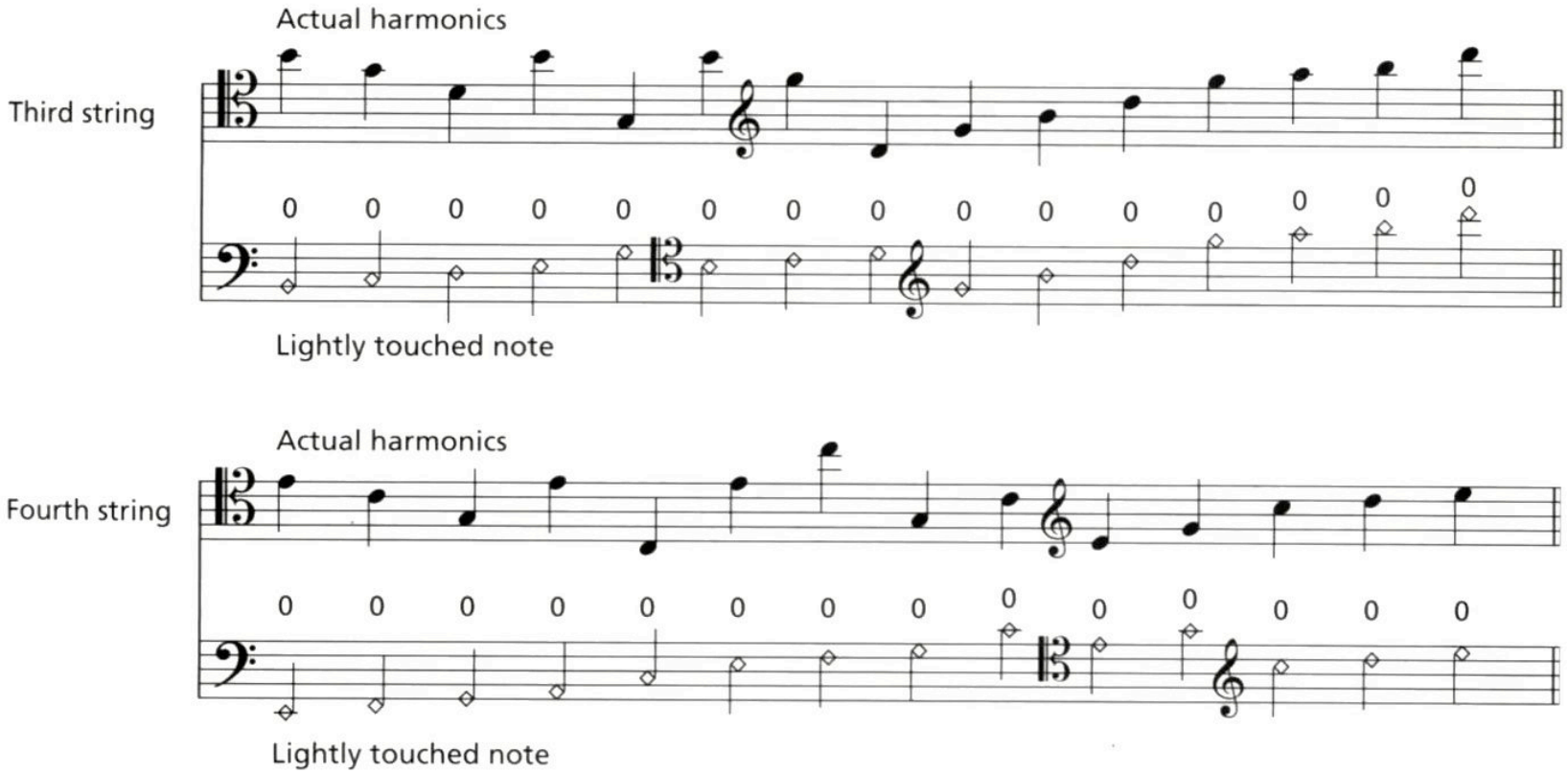


DEDILHADO

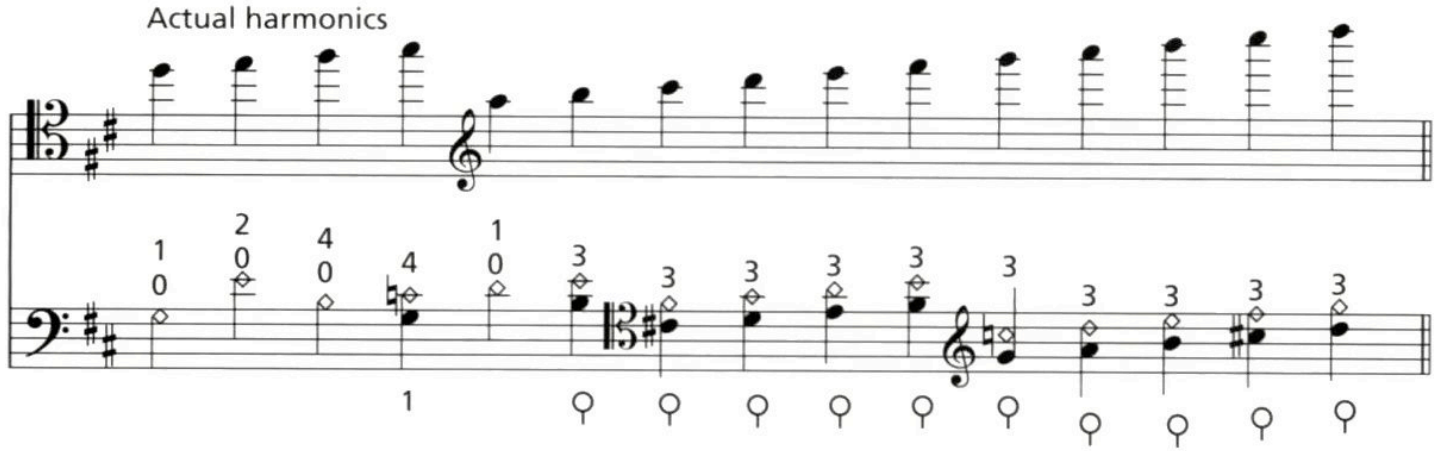

C G D A
First Finger
First Position
Second Finger
Third Finger
Fourth Finger
First Finger
Second Position
First Finger
Third Position
First Finger
Fourth Position
First Finger
Fifth Position

HARMÔNICOS

a. NATURAL HARMONICS

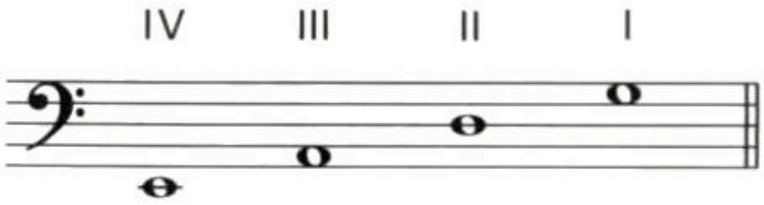


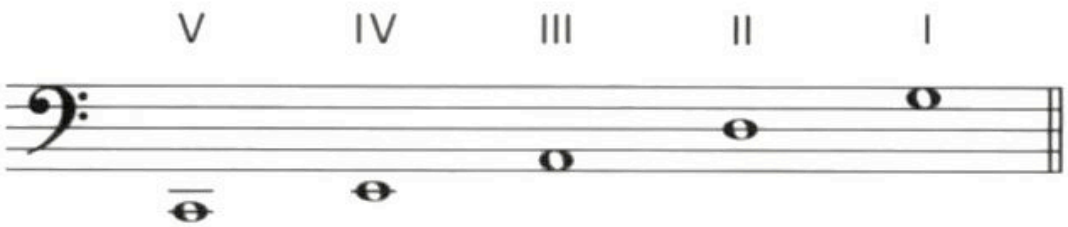
b. NATURAL AND ARTIFICIAL HARMONICS



Contrabaixo

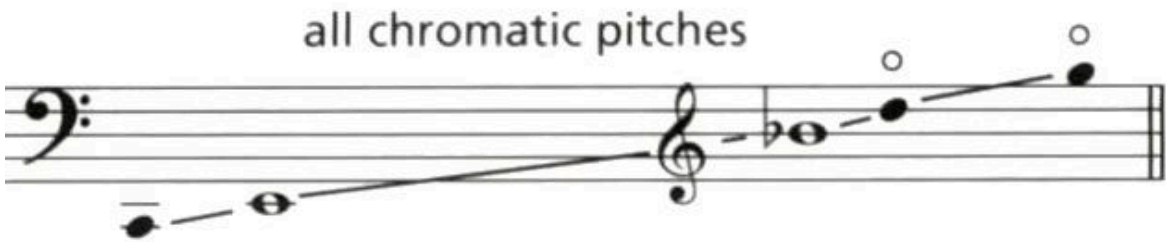
AFINAÇÃO



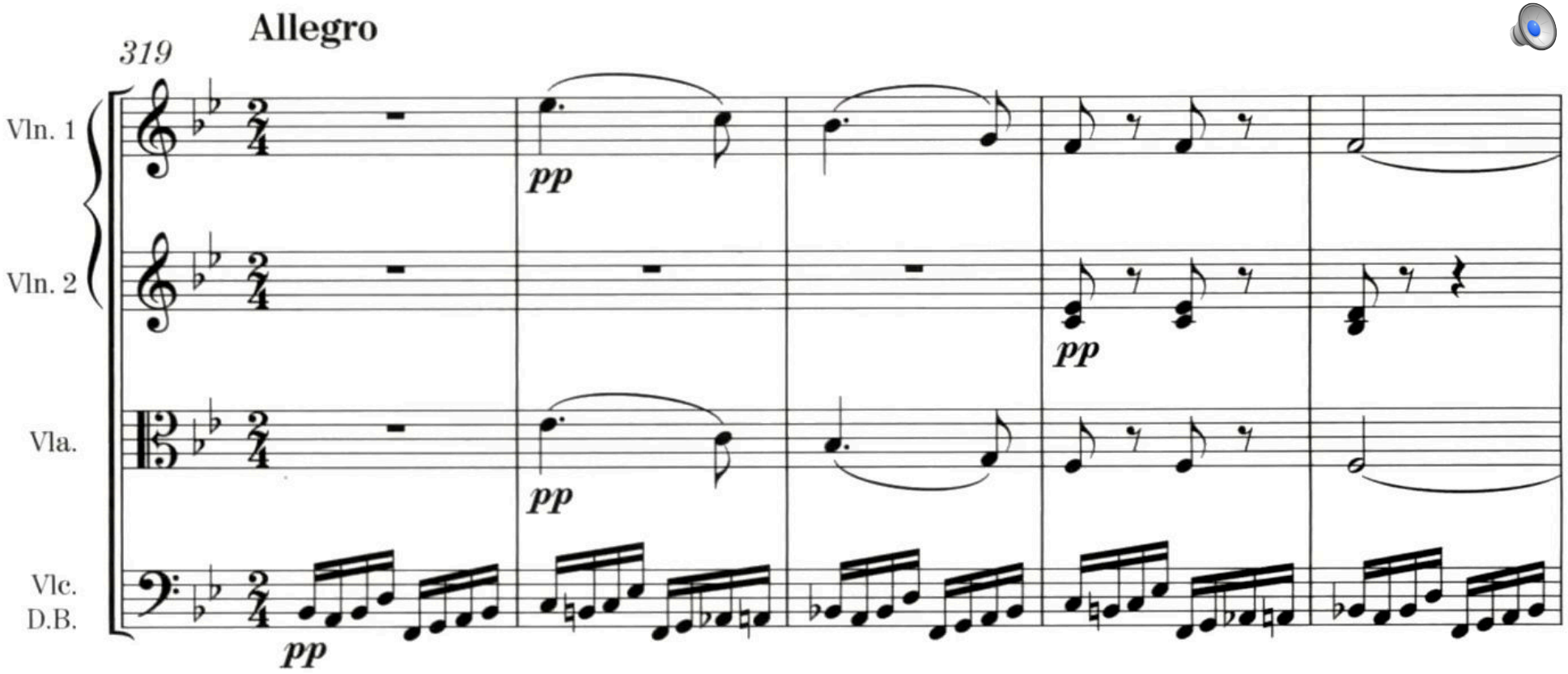


NOTAÇÃO

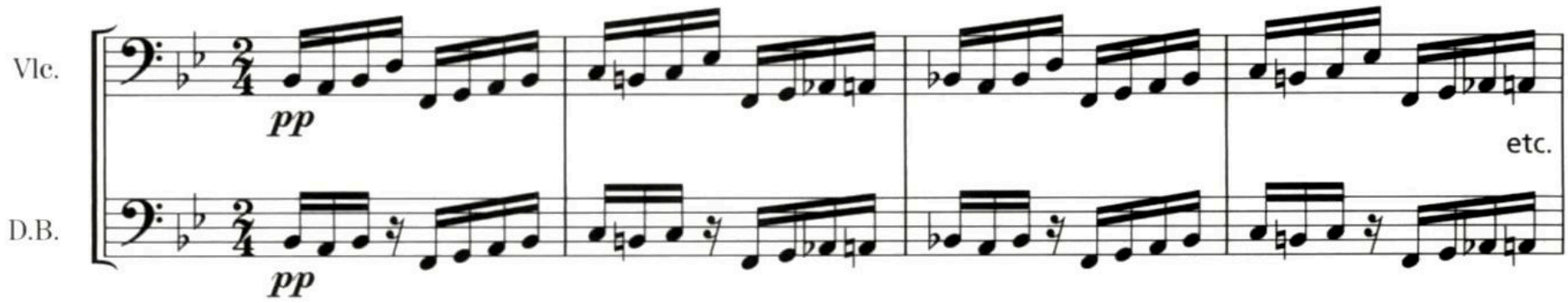
TESSITURA



EXAMPLE 3-69. Beethoven, Symphony No. 4, fourth movement, mm. 319–323



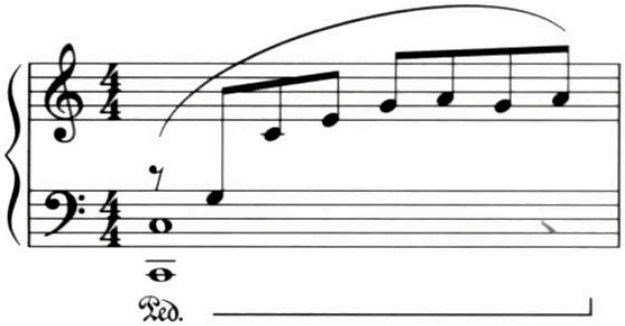
EXAMPLE 3-70. Beethoven, Symphony No. 4, fourth movement, mm. 319–323, clarified



Transcrevendo do piano para cordas

SIMULANDO UM PEDAL

PIANO ORIGINAL



TRÊS VERSÕES PARA CORDAS (tocadas sem pausa)

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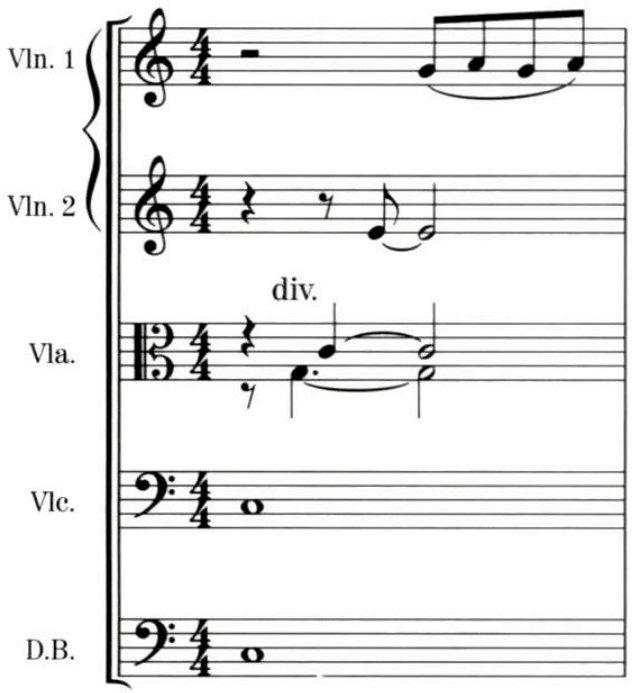

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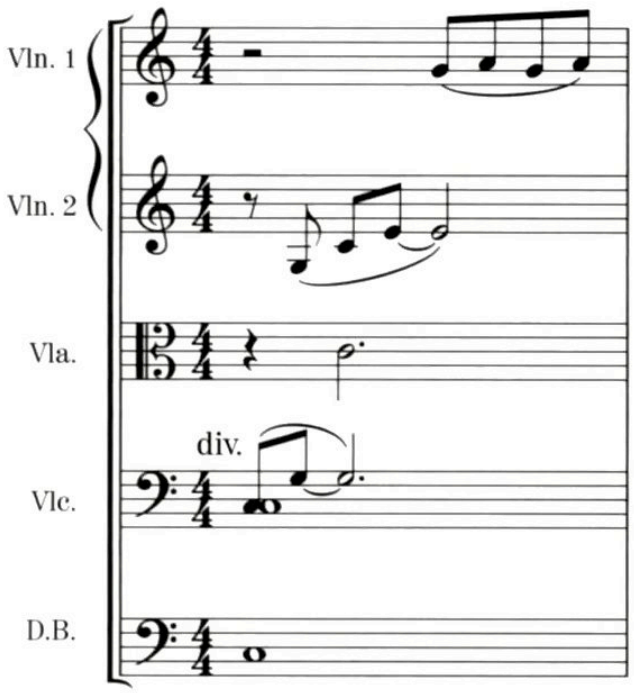

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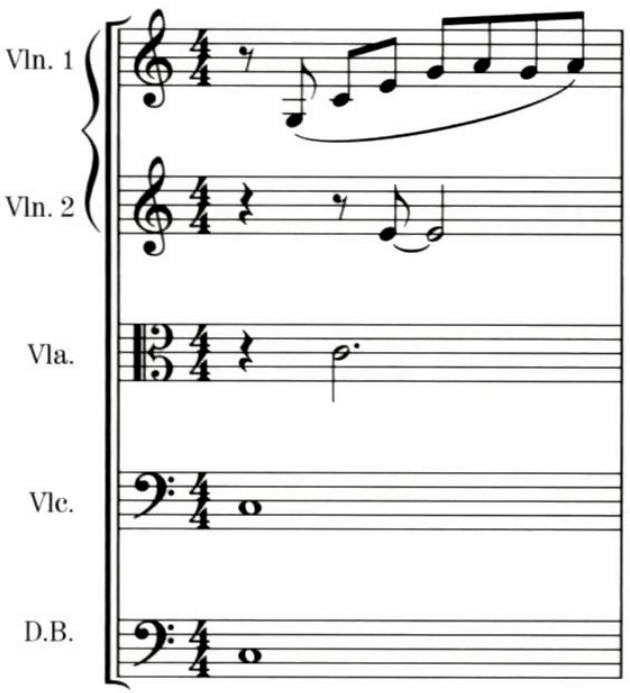
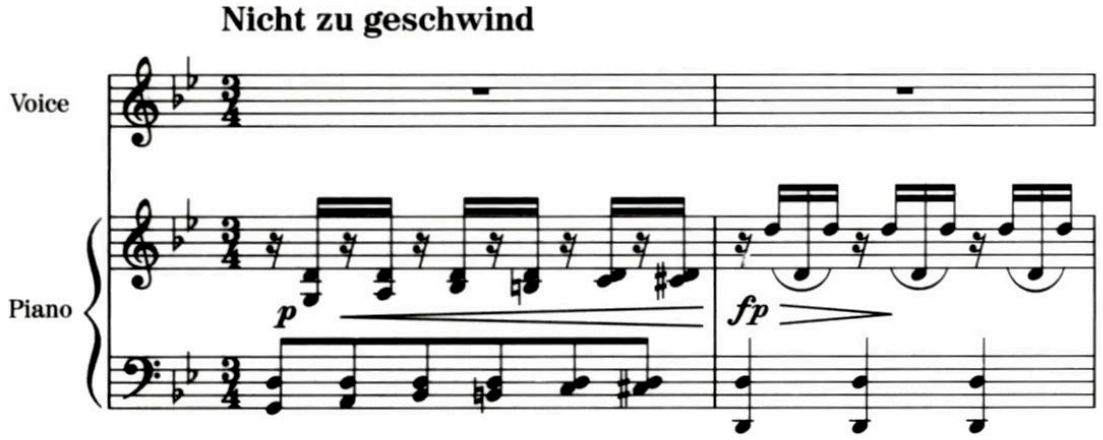


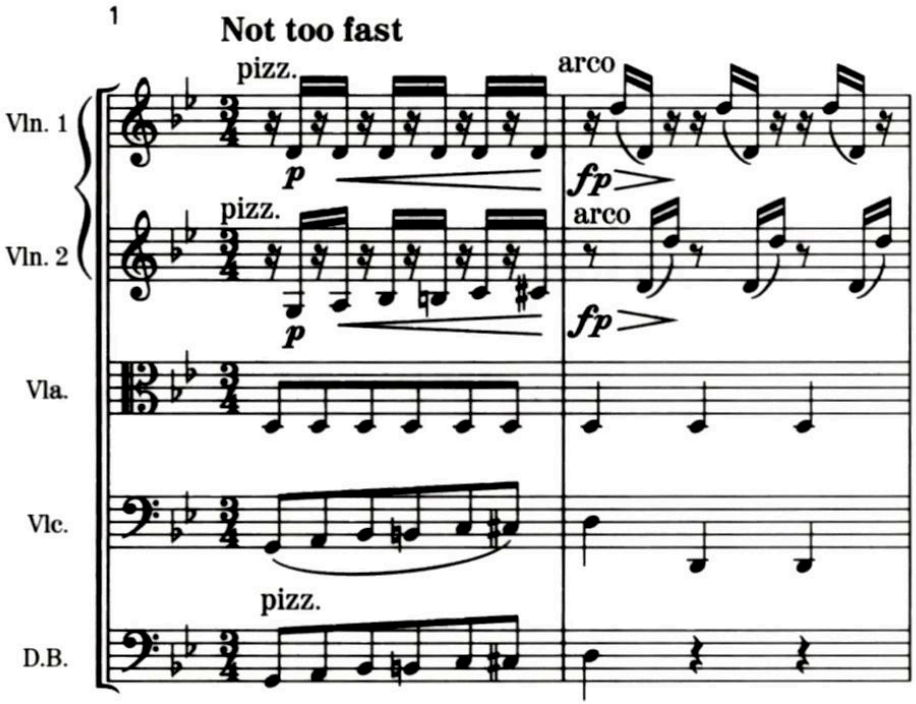
FAZENDO ACOMPANHAMENTO

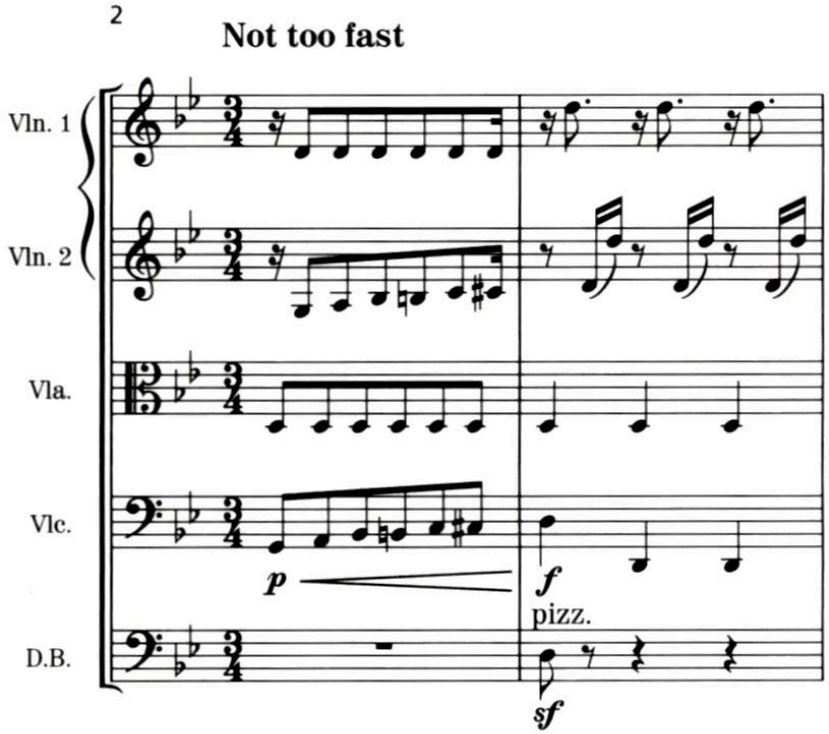
EXAMPLE 5-41. Schubert, "Rückblick," mm. 1–2

PIANO ORIGINAL



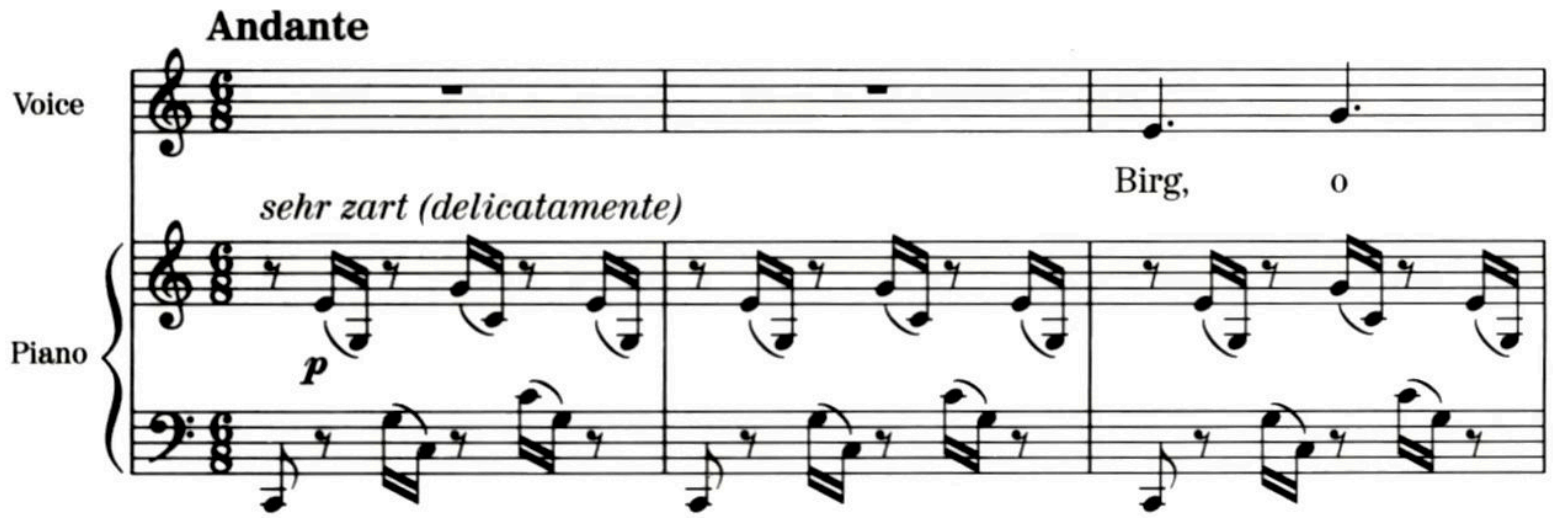
DUAS VERSÕES PARA CORDAS (tocadas sem pausa)



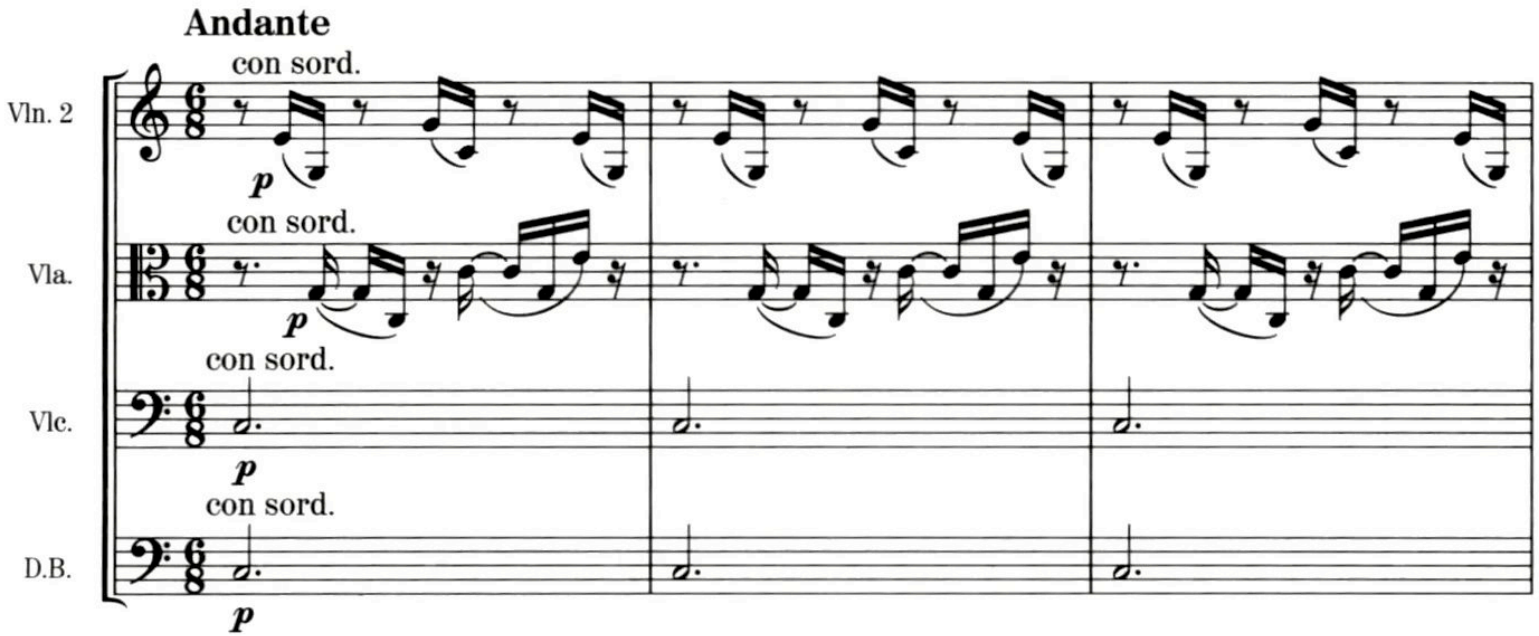


EXAMPLE 5-42. Brahms, "An ein Veilchen," mm. 1–3

PIANO ORIGINAL

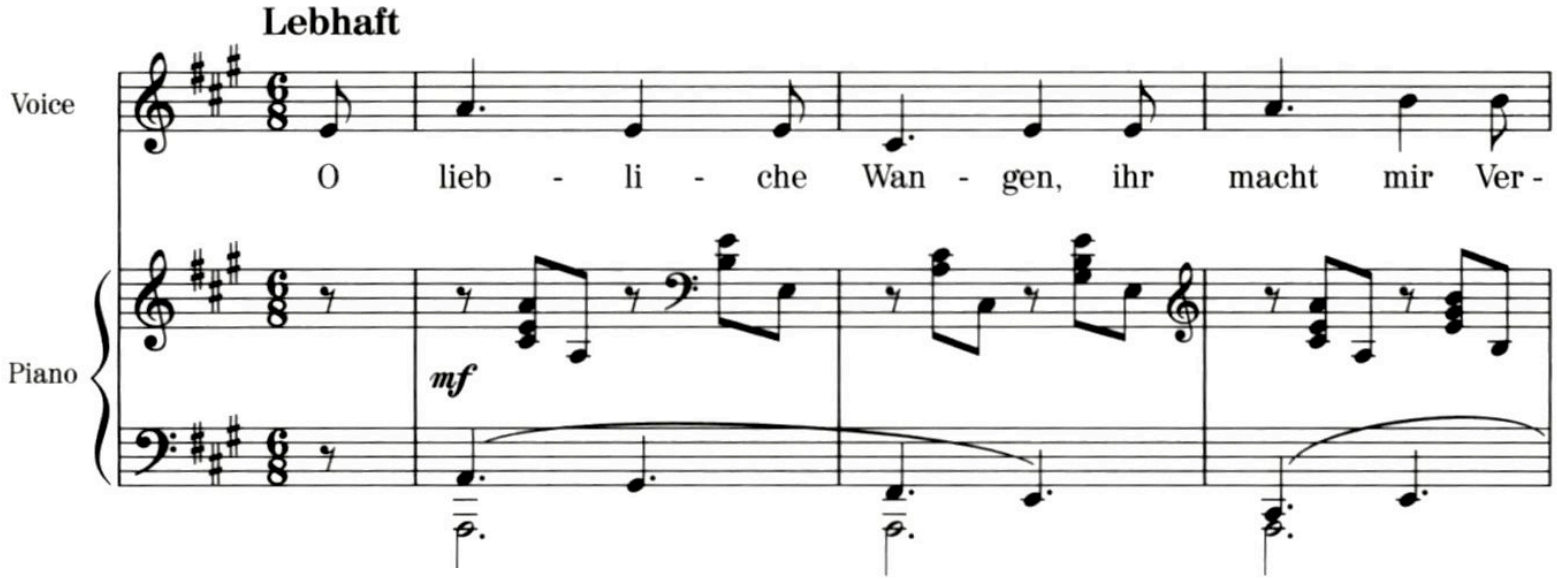


VERSÃO PARA CORDAS

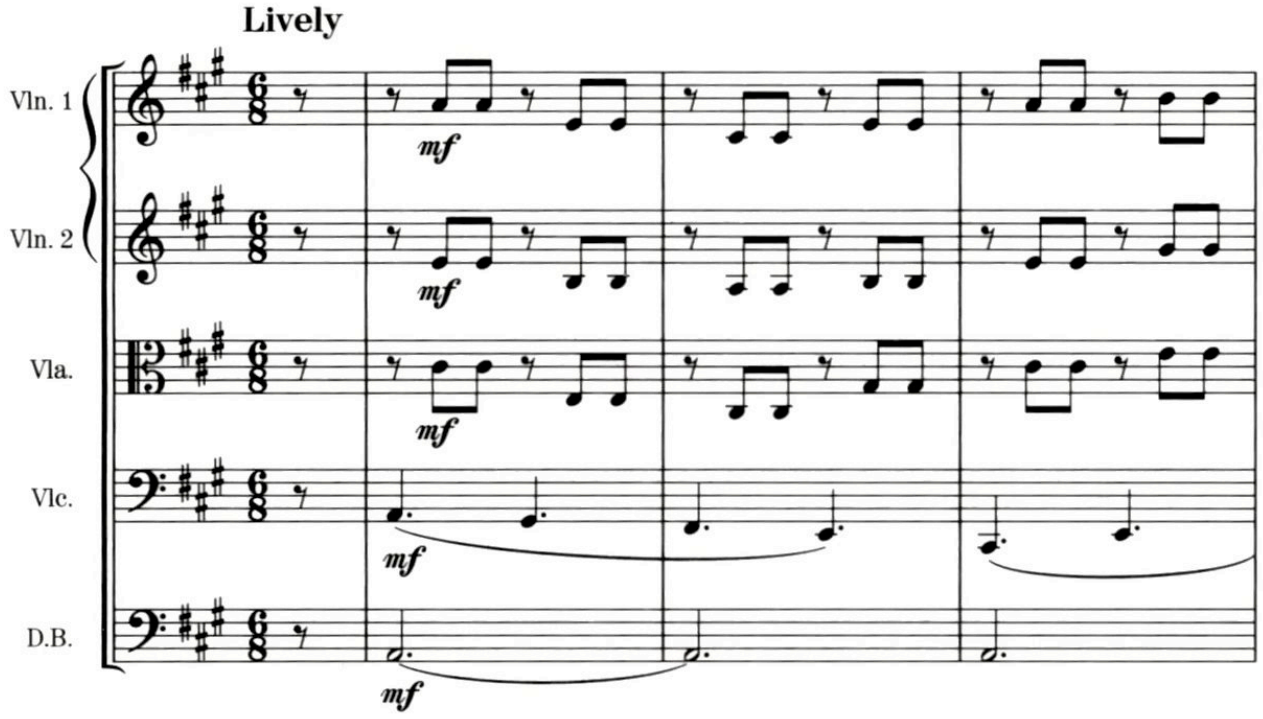


EXAMPLE 5-43. Brahms, "O liebliche Wangen," mm. 1–3

PIANO ORIGINAL

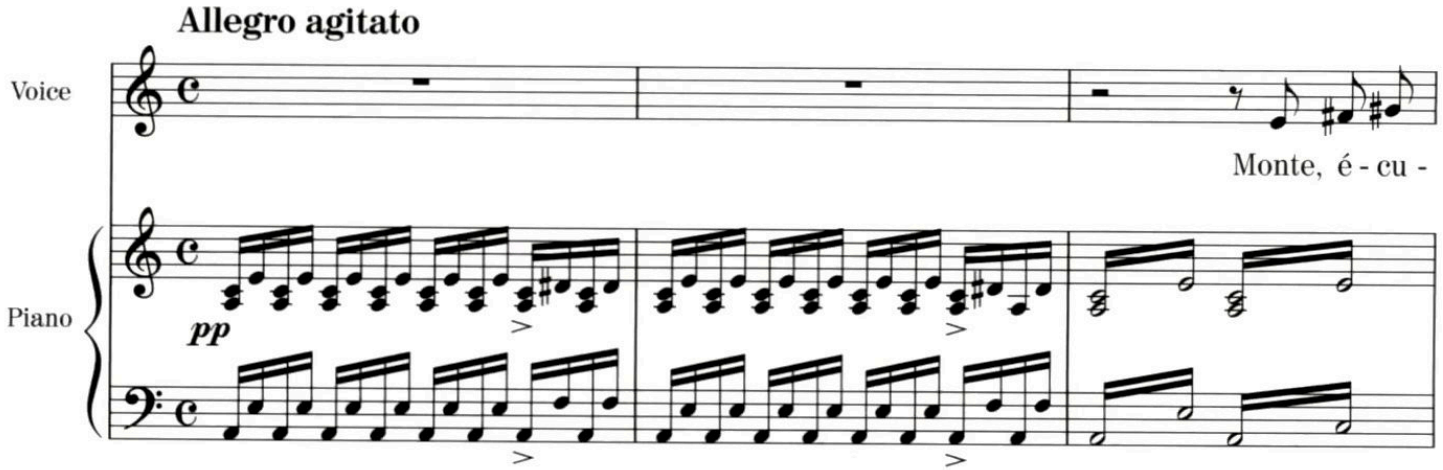


VERSÃO PARA CORDAS



EXAMPLE 5-44. Saint-Saëns, "L'Attente," mm. 1–3

PIANO ORIGINAL



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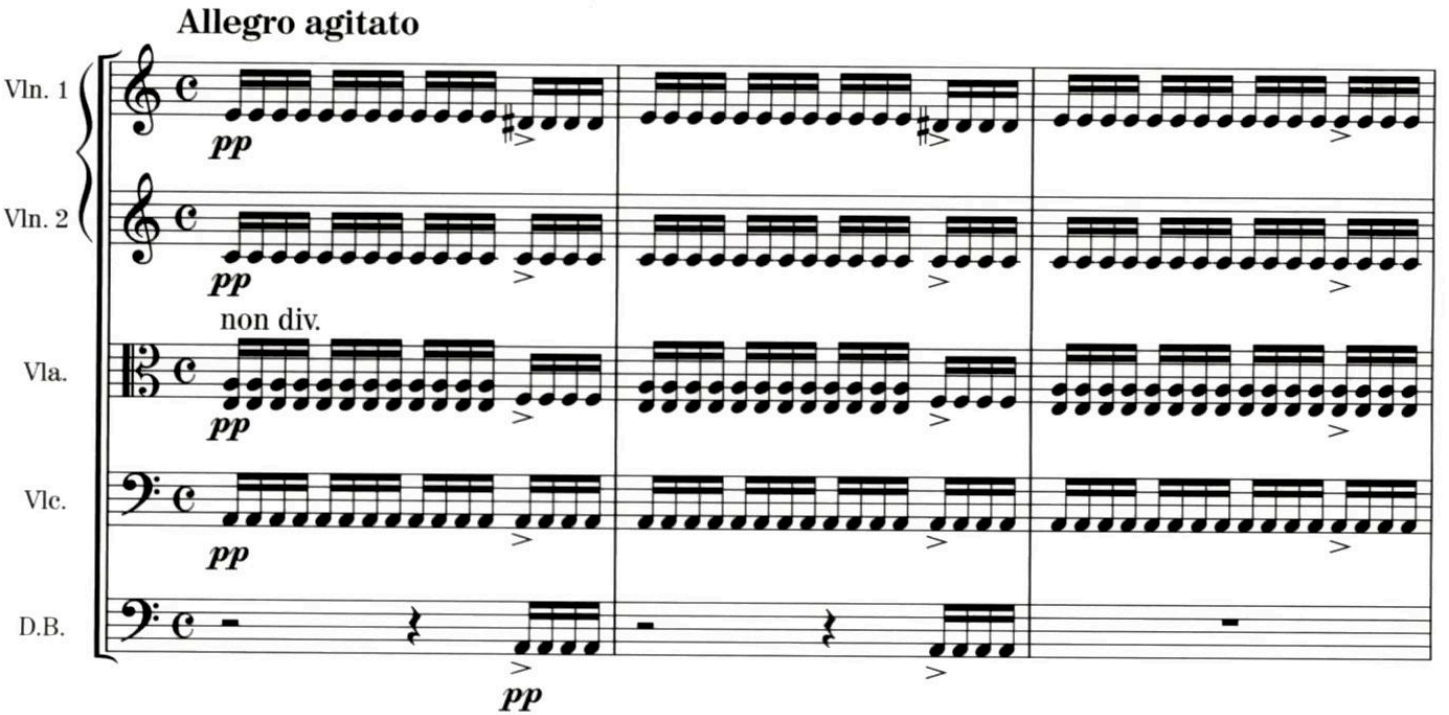

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