



INSTRUMENTAÇÃO: CORDAS

MARCOS FILHO

A FAMÍLIA DAS CORDAS



Violino



Viola



Violoncelo



Contrabaixo

Características gerais

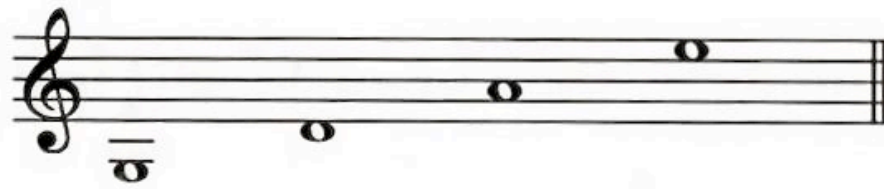
- Possui uma enorme extensão abrangendo sete oitavas entre os contrabaixos e violinos;
- Possui timbre homogêneo em toda sua extensão com apenas poucas variações em registros diferentes;
- Faixa dinâmica bem equilibrada permitindo *pianissimos* e *fortissimos* efetivos;
- Sonoridade versátil: produz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



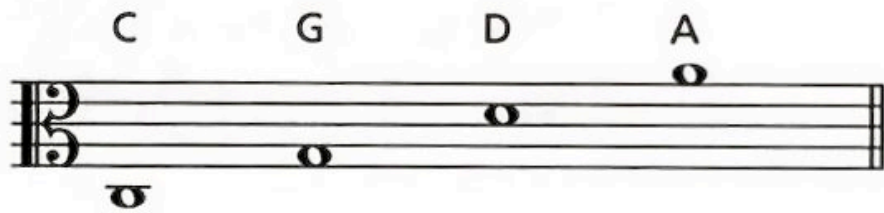
No violoncelo o apoio é no espigão.

Nomenclatura do Violino

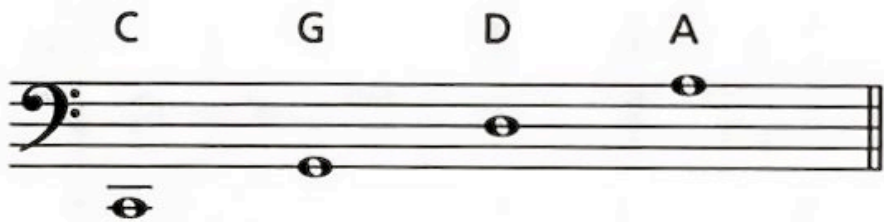




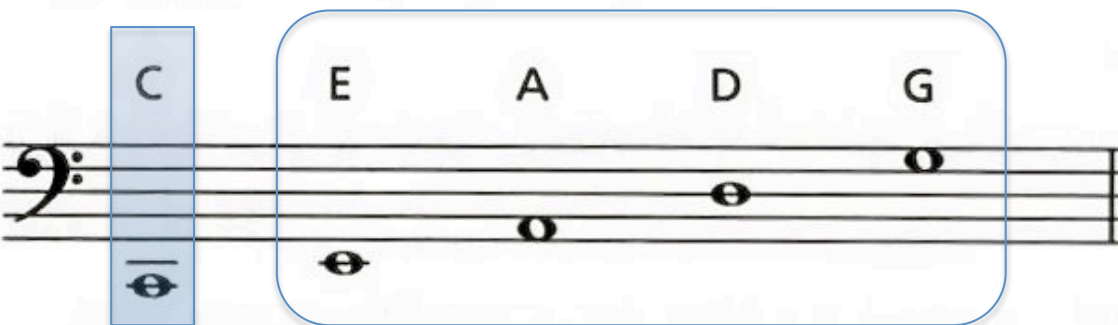
Violino



Viola



Violoncello



Contrabaixo

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

TESSITURA BÁSICA

The image displays a musical score for four string instruments: Violin, Viola, Cello, and Contrabass. A vertical dashed line labeled "MIDDLE C" is positioned between the second and third staves. The Violin staff shows a range of notes from middle C up to the highest notes on the staff, with a bracket labeled "NOT PRACTICAL" above the upper notes. The Viola staff shows a range from middle C up to the highest notes. The Cello staff shows a range from middle C down to the lowest notes, with a blue box highlighting a specific range of notes. The Contrabass staff shows a range from middle C down to the lowest notes. A blue box highlights the first few notes of the Violin staff.

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

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



7 **Modéré**

The musical score is for the string section of Debussy's "Nuages" from the Nocturnes. It consists of seven staves: Timp., Vln. 1, Vln. 2, Vla., Vcl., and D.B. The key signature is two sharps (D major) and the time signature is 6/4. The tempo is marked "Modéré".

- Timp.:** Remains silent throughout the passage.
- Vln. 1:** Starts with a half note G4 (marked *pp*), followed by a half note A4 (marked *pp*). A dotted line labeled "8va" spans from the first measure to the second. In the fourth measure, there is a half note G4 (marked *pp*) and a half note A4 (marked *pp*). In the fifth measure, there is a half note G4 (marked *pp*) and a half note A4 (marked *pp*). In the sixth measure, there is a half note G4 (marked *pp*) and a half note A4 (marked *pp*). In the seventh measure, there is a half note G4 (marked *pp*) and a half note A4 (marked *pp*). A "a 3" marking is present above the staff in the fifth measure.
- Vln. 2:** Remains silent until the fourth measure, where it plays a half note G4 (marked *pp*) and a half note A4 (marked *pp*). In the fifth measure, it plays a half note G4 (marked *pp*) and a half note A4 (marked *pp*). In the sixth measure, it plays a half note G4 (marked *pp*) and a half note A4 (marked *pp*). In the seventh measure, it plays a half note G4 (marked *pp*) and a half note A4 (marked *pp*). A "a 3" marking is present above the staff in the sixth measure.
- Vla.:** Remains silent throughout the passage.
- Vcl.:** Remains silent throughout the passage.
- D.B.:** Remains silent throughout the passage.

DIVISI

12

Vln. 1

Vln. 2

Vla.

Vlc.

D.B.

pp

pp

pp

pp

pp

pp

pizz.

pp

a 2

a 3

a 2

a 2

a 2

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

Like a dance

(with expression)

1st stand
Vln. 1

2, 3, 4,
5 stands

1st stand
Vln. 2

2nd
stand

4th stand

1st stand
Vla.

2nd stand

4th stand

div.

f

pp

A str.

pp

p

p

p

p

f

glissando

Solo

f

p



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



Mouvement de valse viennoise

sur Sol.....

Vln. 1

mf espressif

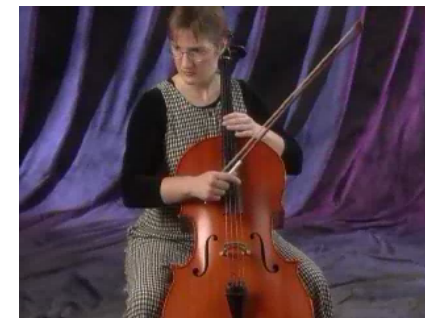
EXAMPLE 2-15. Bartók, *Music for Strings, Percussion and Celesta*, second movement, 1 m. before 170

$\text{♩} = 138$

Vln. 1

mf *f* *mf* *f* *p*

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



NON LEGATO

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



Molto maestoso

Vln. 1

1

9

Talão

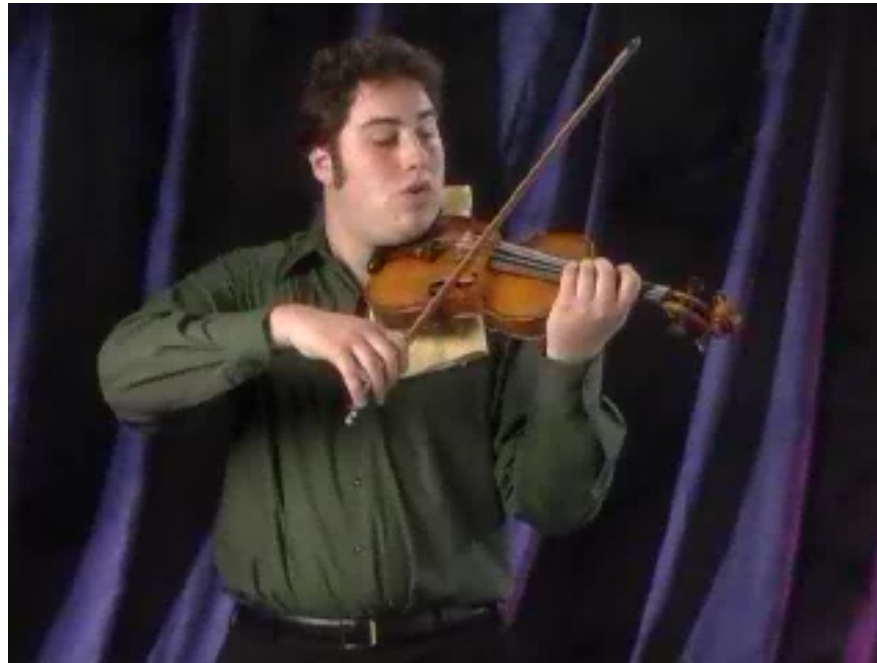


Crina

Ponta



LEGATO



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



Andante con moto

Vln. 1

Vln. 2

Vla.

Vcl. D.B.

Vln. 1

Vln. 2

Vla.

Vcl. D.B.

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

Allegro

276

Vln. 1

Vln. 2

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

Allegro

378

Vln. 1

p

Vln. 2

383

Vln. 1

Vln. 2

pp

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

Allegro

461

Vla.

f

cresc.

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

Adagio

31

Vln. 1

Vln. 2

Vla.

Vlc.

D.B.

f

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

più cresc. *f*

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

half the players

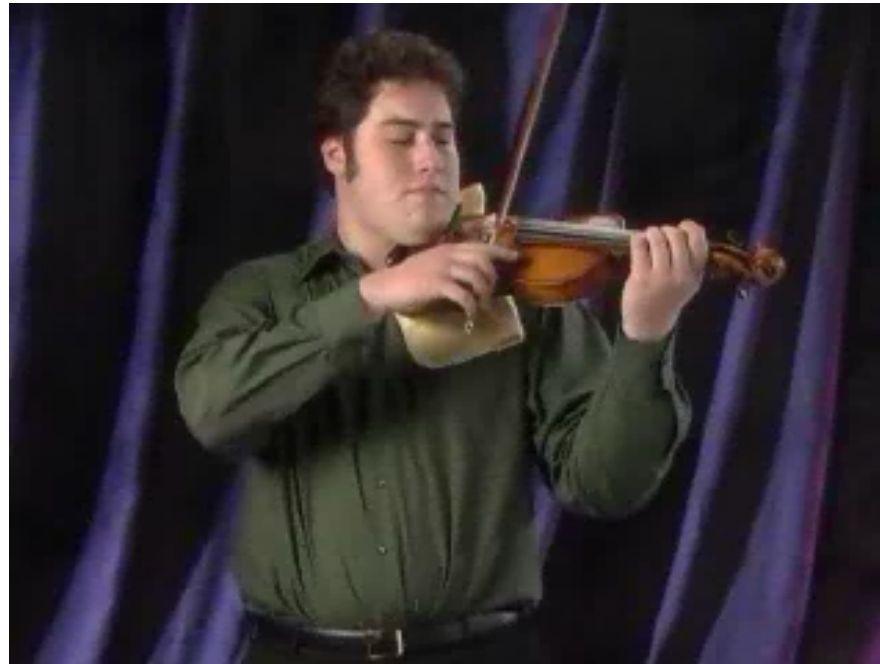
più cresc. *f*

half the players



DÉTACHÉ

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



Molto maestoso

Vln. 1

9

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

Allegro giusto 142

Vln. 1
f cresc.

Vln. 2
f cresc.

Vla.
f cresc.

Vlc.
f cresc.

D.B.
f cresc.



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

8 **Allegro con fuoco**

Vln. 2 Div.

punta d'arco

pp

11

punta d'arco

pp



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

Andante

20
au talon *ten.* *ten.*

Vln. 1
ff *sf ten.* *sf ten.* *sf*

Vln. 2
ff *sf ten.* *sf ten.* *sf*

Vla.
ff *sf ten.* *sf ten.* *sf*

Vcl. D.B.
ff *sf* *sf* *sf*

25 *ten.*

Vln. 1
sf *sf ten.* *ff*

Vln. 2
sf *sf ten.* *ff*

Vla.
sf *sf ten.* *ff*

Vcl. D.B.
sf *sf* *ff*



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

Allegro molto vivace

109

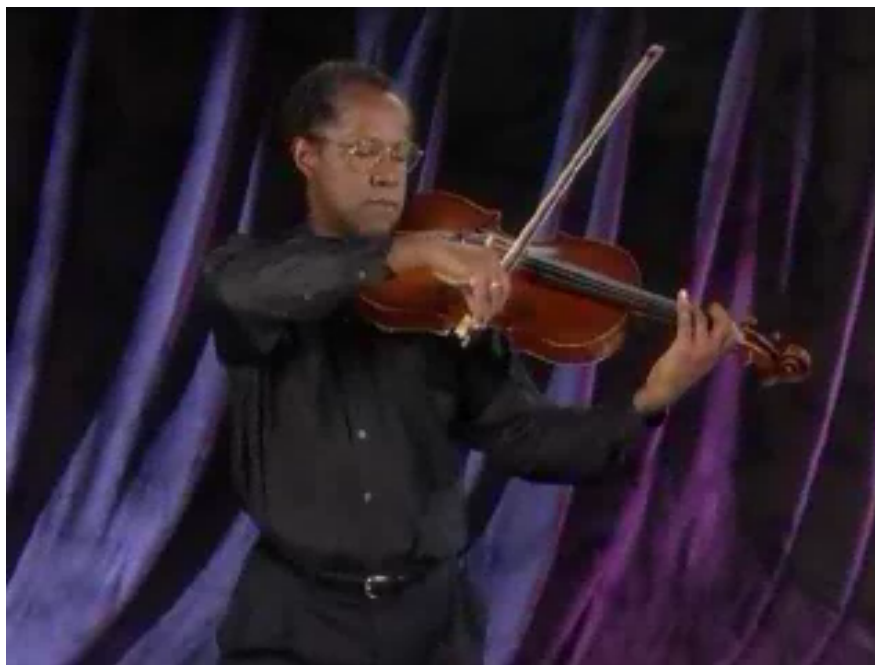
Vln. 1
Vln. 2
Vla.
Vlc.
D.B.

ff
ff
ff
pp
pp
ff



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).



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

Larghetto

1

Vln. 1 *p* *sim.*

Vln. 2 *p* *sim.*

Vla. *p* *sim.*

Tenor

Vlc. D.B. *p*

6 4 3 6 6 6 4 5

Com-fort ye!



STACCATO

Moderato

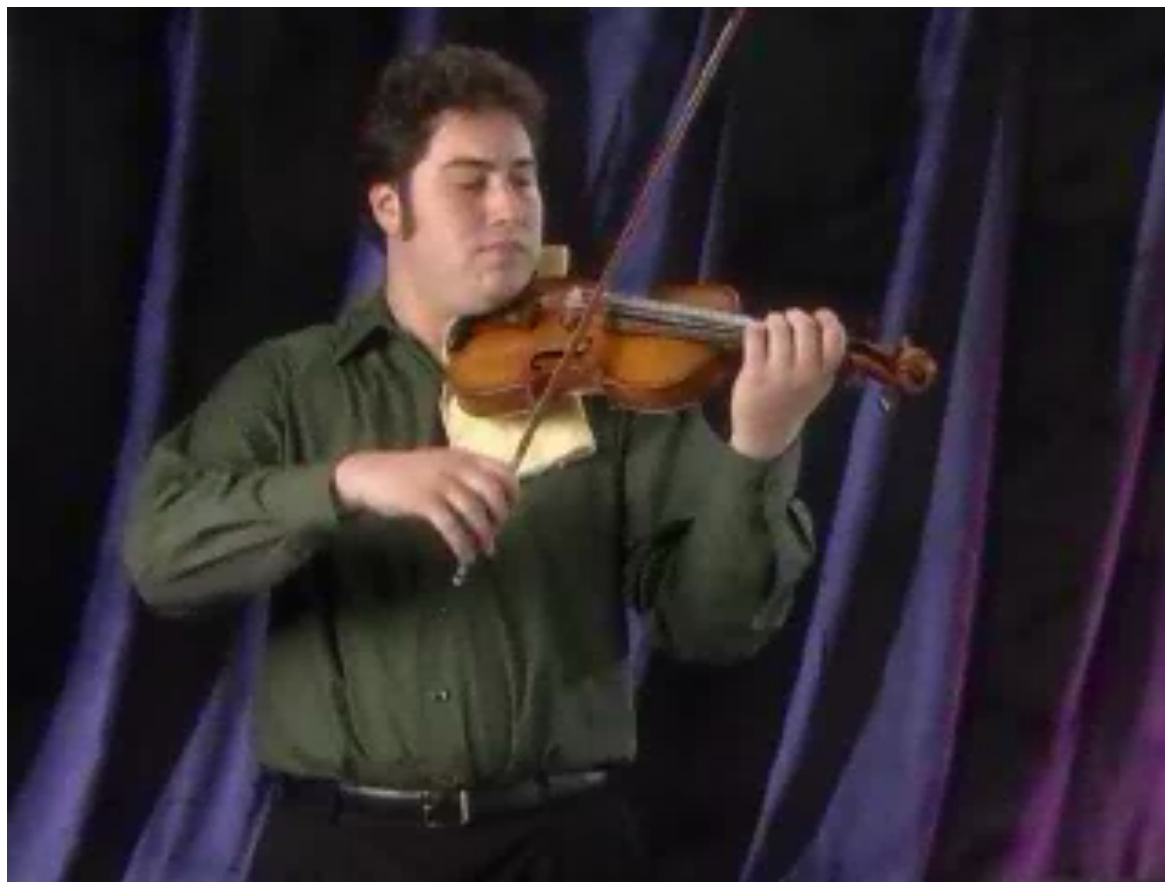
Vln.

ff *pp*

Moderato

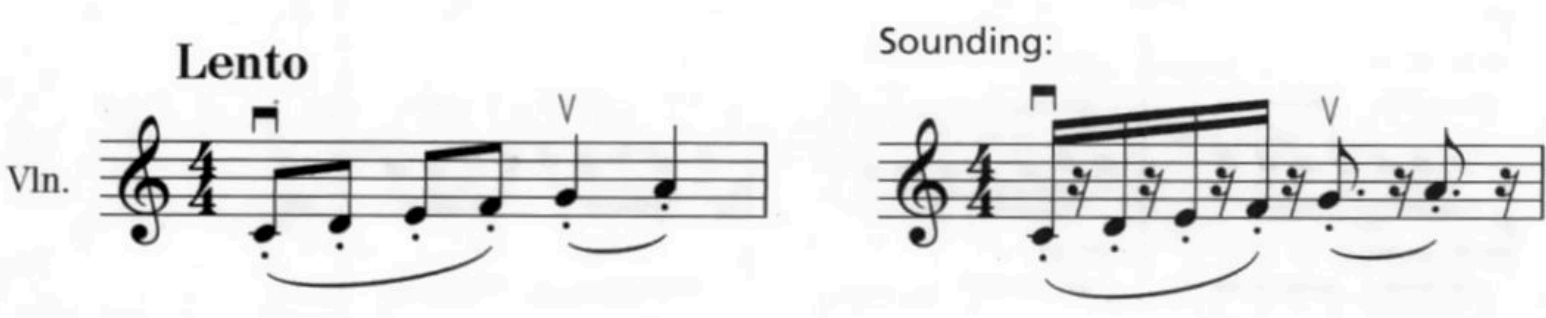
Vln.

ff *pp*

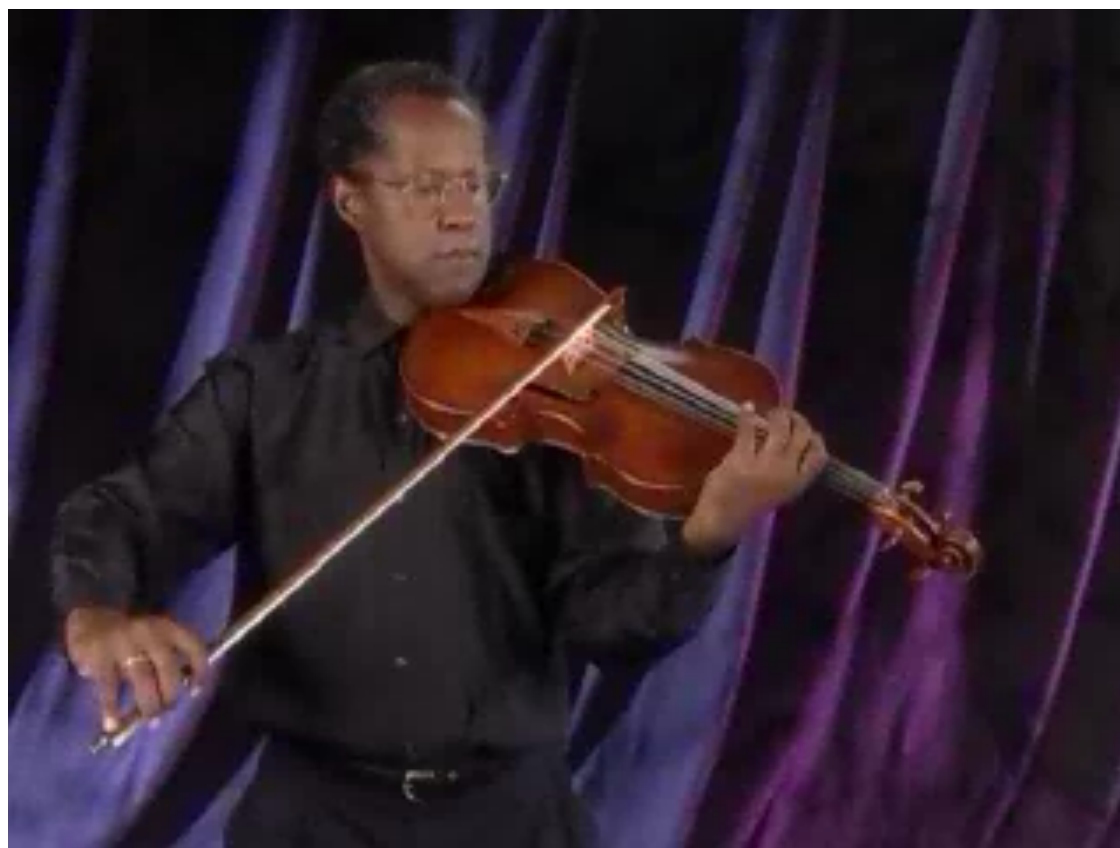


Staccato com ligadura

Vln. **Lento** **Sounding:**



The image displays two musical staves for a violin part. The left staff is labeled 'Lento' and shows a sequence of four notes (quarter, quarter, quarter, quarter) under a slur, with a 'V' above the second note. The right staff, labeled 'Sounding:', shows the same sequence of notes but with vertical lines indicating staccato articulation. A speaker icon is located to the right of the 'Sounding:' staff.



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

$\text{♩} = 76$
(at the point)

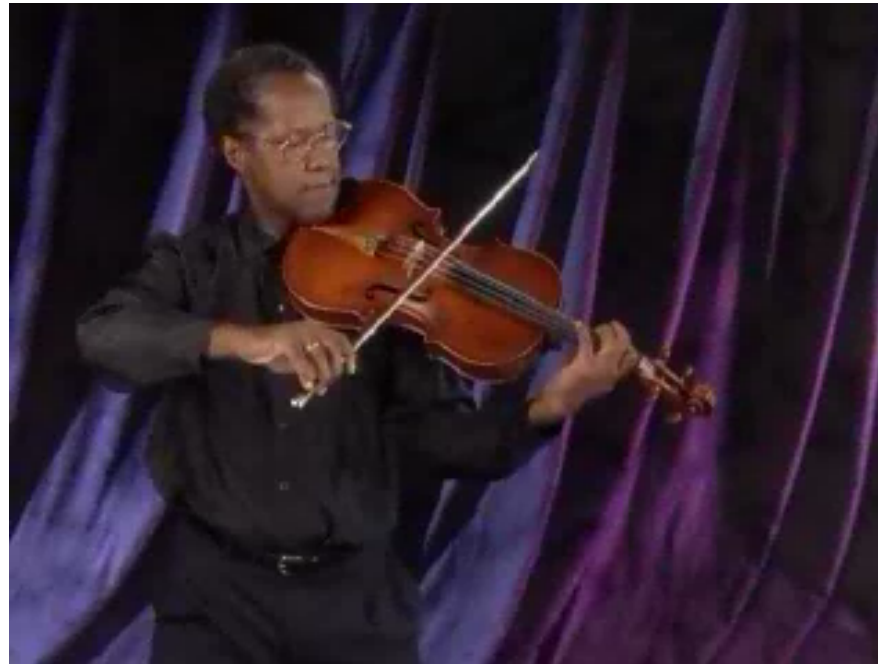
Vln. 1

Vla.



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

Lively 53

Vln. 1

Vln. 2

Vla.

ff

ff

ff



SPICCATO

EXAMPLE 2-38. Stravinsky, *Dumbarton Oaks Concerto*, first movement, at 22

Tempo giusto (♩ = 152)

sim.

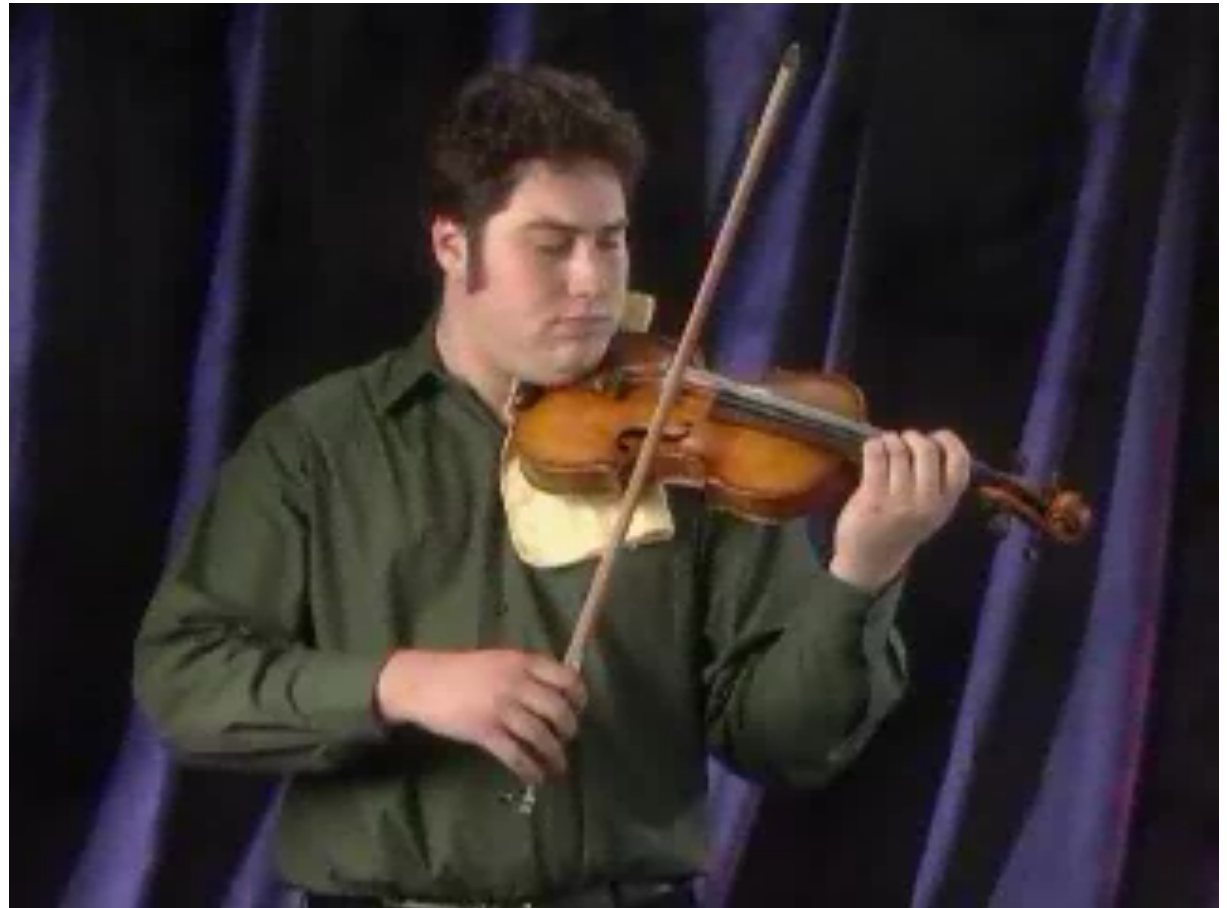
Vln. 1



The musical score is for Violin 1, marked 'f' (forte) and 'sim.' (sforzando). It is in 2/4 time and features a rapid, articulated spiccato passage. The notation consists of a series of eighth notes, some beamed together, with stems pointing downwards. The key signature has two flats (B-flat and E-flat).



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.

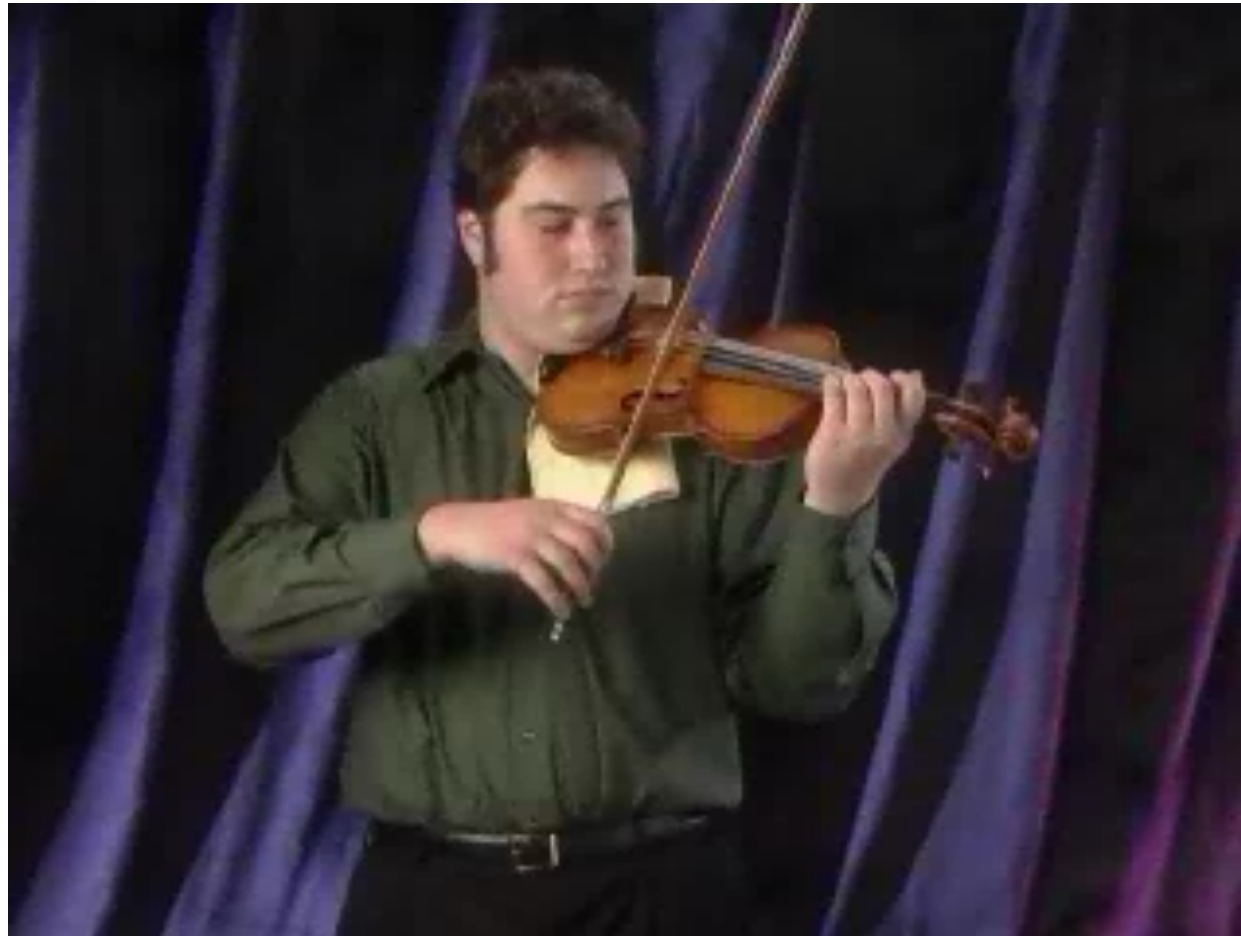


EXAMPLE 2-39. Rachmaninoff, *Symphonic Dances*, first movement, at 18

Vln. 1

Allegro *sim.*

p *pp*



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

The image shows a musical score for the first movement of Mahler's Symphony No. 4, measures 21-23. The score is written for Violin (Vla.) and Viola (Vlc.) in 4/4 time, with a key signature of one sharp (F#). The tempo is marked *pp legg.* (pianissimo, leggiero). The score consists of two staves. The top staff is for the Violin (Vla.) and the bottom staff is for the Viola (Vlc.). Both parts feature a melodic line with a mix of eighth and sixteenth notes, often beamed together. The music is characterized by its delicate and lyrical quality, typical of Mahler's style in this movement. The number 22 is written above the first measure of the second system.



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)

19 **Vivo**

Vln. solo

Vln. 1

Vln. 2

Vla.

Vlc.

D.B.

2/4

3

tr



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

CD-

67 ♩ = 144

Vln. 1

Vln. 2

Vla.

pp

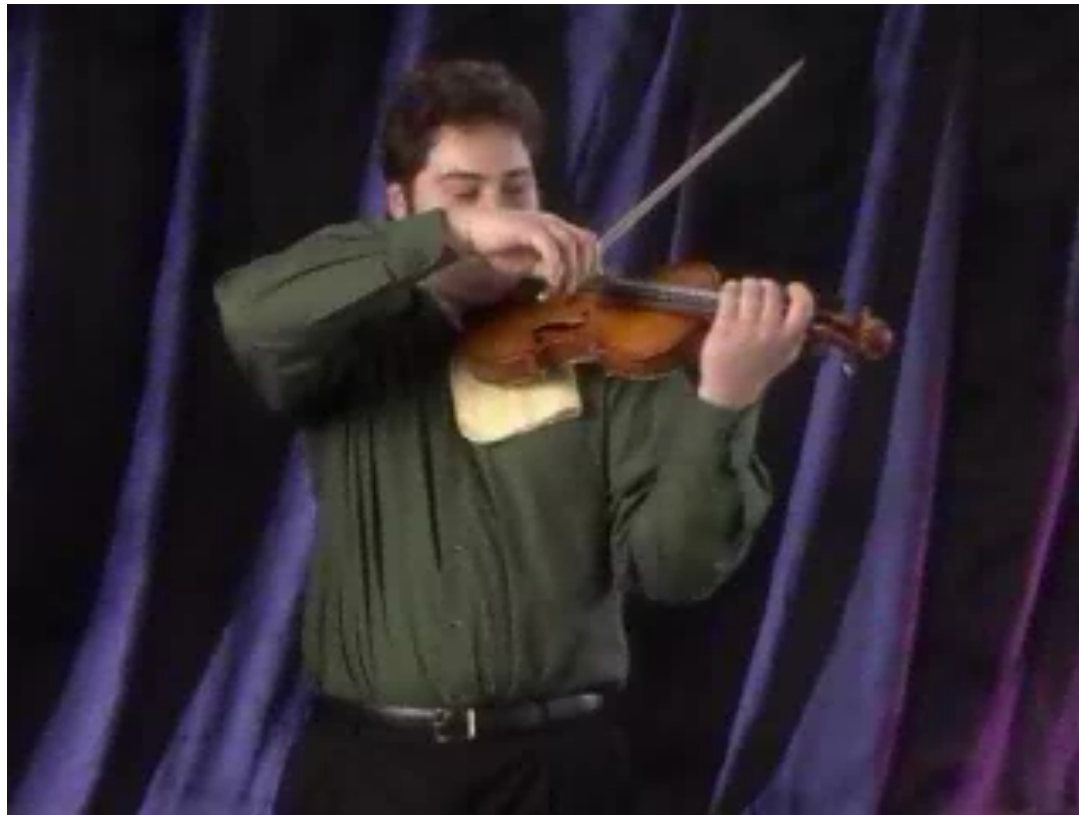
pp

pp



ARPEGGIANDO

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



EXAMPLE 2-43. *Arpeggiando*

Musical score for Example 2-43, *Arpeggiando*. The score is written on a single staff in treble clef, key of D major (one sharp), and 4/4 time. It consists of eight measures. The first two measures feature a descending eighth-note arpeggio with a slur. The next four measures feature a triplet of eighth notes, each with a slur. The final two measures feature an ascending eighth-note arpeggio with a slur.

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

Allegro molto

Vln. solo

328

ff

poco a poco dimin.

331

segue

al

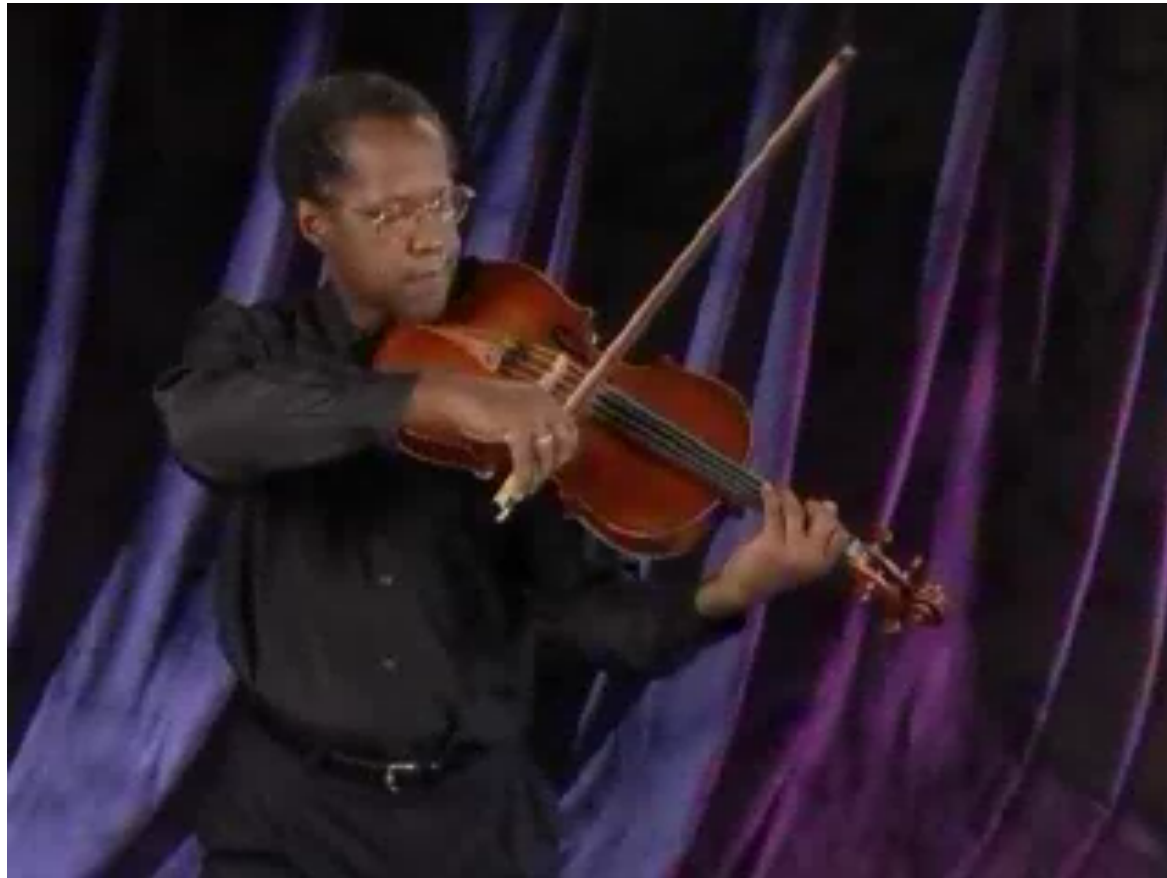
334

pp

Musical score for Example 2-44, Mendelssohn Violin Concerto, first movement, mm. 328–336. The score is written on three staves in treble clef, key of D major (one sharp), and 4/4 time. The first staff (mm. 328–330) begins with a dynamic marking of *ff* and a tempo marking of **Allegro molto**. The second staff (mm. 331–333) features a dynamic marking of *poco a poco dimin.* and ends with the word *segue*. The third staff (mm. 334–336) begins with a dynamic marking of *pp* and ends with the word *al*. The music consists of continuous eighth-note arpeggios with slurs.



TRINADOS



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



eilien zurückhalten

Vln. 1
Vln. 2
Vla.
Vcl.
D.B.

Vln. 1
Vln. 2
Vla.
Vcl.
D.B.

TRÊMULOS

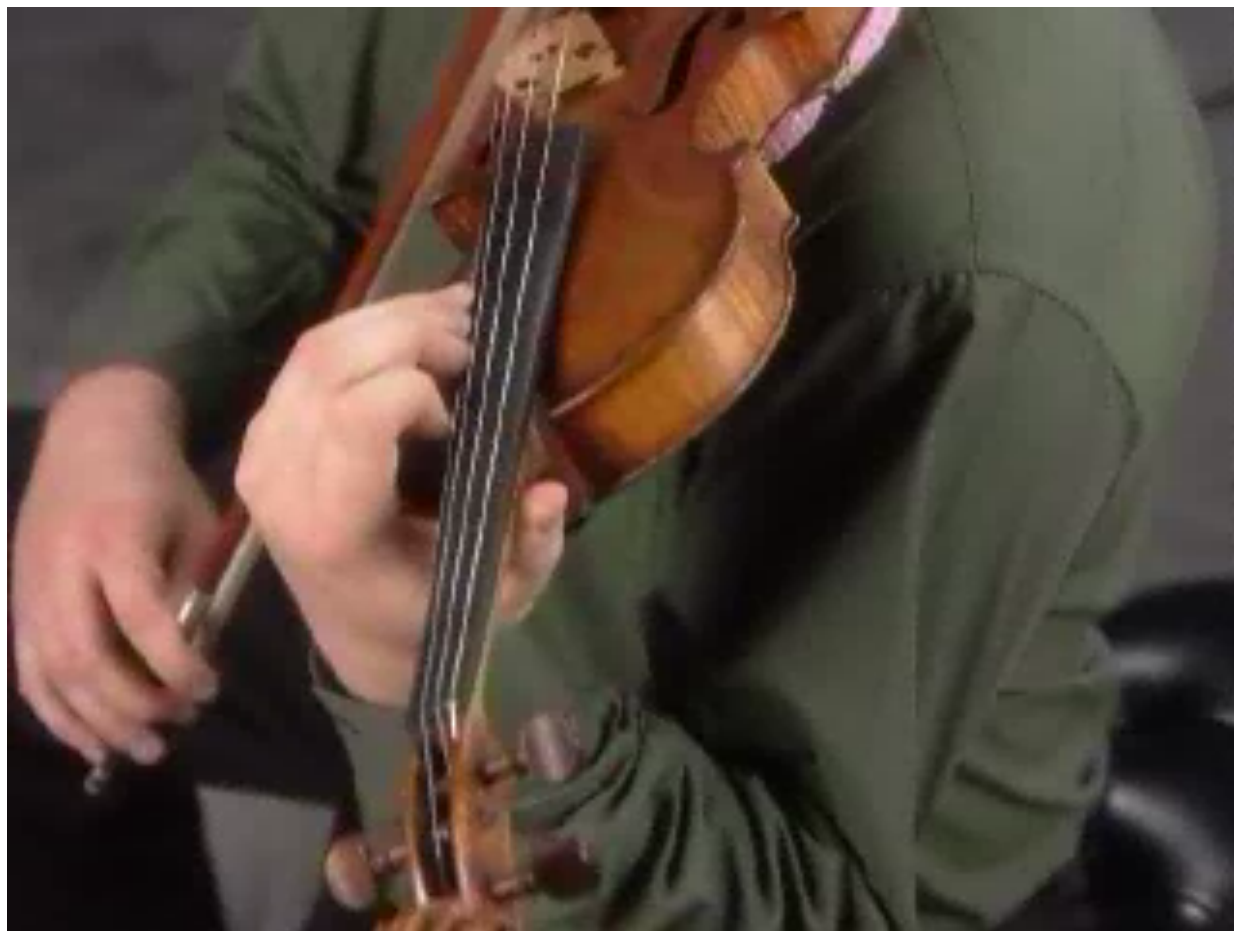
EXAMPLE 2-46. Verdi, Requiem, "Dies irae," mm. 46–51

Allegro agitato (♩ = 80)

Vln. 1

The musical score shows a single staff for Violin 1. It begins with a treble clef, a key signature of one flat (B-flat), and a common time signature (C). The tempo is marked 'Allegro agitato' with a quarter note equal to 80 beats per minute. The dynamics are marked 'ff' (fortissimo). The score consists of measures 46 through 51. Measure 46 starts with a dotted quarter note on G4, followed by a dotted quarter note on B-flat4, and then a dotted quarter note on D5. Measures 47-51 feature a series of sixteenth-note tremolos on the notes G4, B-flat4, and D5, with a '8va' marking above the staff indicating an octave shift.

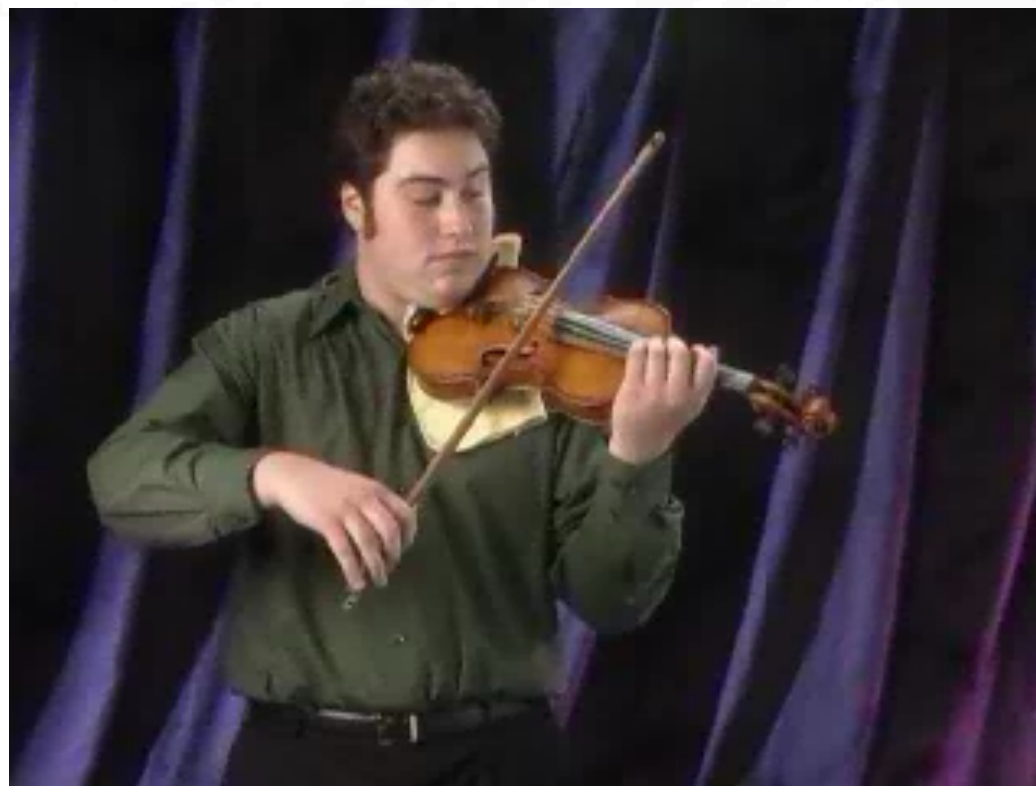
Extensivamente utilizado em todos os instrumentos. Existem dois tipos de trêmulos: trêmulo de arco e trêmulo de dedo.



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

Modéré

The musical score consists of two staves, Vln. 1 and Vln. 2, in 6/8 time. The key signature has two flats (B-flat and E-flat). The tempo is marked 'Modéré'. The score shows two measures. In the first measure, the dynamics are *p* (piano) and *mf* (mezzo-forte). In the second measure, the dynamics are *p* and *mf*. The notation includes eighth notes, quarter notes, and slurs.



Diferentes utilizações com o arco

SUL TASTO (Francês: *Sur la touche*)

EXAMPLE 2-51. Debussy, *Ibéria*, part 2, at 40

$\text{♩} = 92$
sur la touche (espressif et doucement soutenu)

Vle. 

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

Allegro (♩ = 144)
sul ponticello

Vln. 1

The musical score for Violin 1 (Vln. 1) is written in treble clef with a key signature of one flat (B-flat) and a 2/4 time signature. The tempo is marked 'Allegro' with a quarter note equal to 144 beats per minute. The instruction 'sul ponticello' is written above the staff. The score consists of seven measures of chords. The first measure is marked 'mf'. The second measure is marked 'pp'. The third measure is marked 'pp'. The fourth measure is marked 'pp'. The fifth measure is marked 'pp'. The sixth measure is marked 'pp'. The seventh measure is marked 'f'. A dynamic hairpin starts at 'pp' in the second measure and reaches 'f' in the seventh measure.

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 arranhadura, com menos fundamental e muitos harmônicos agudos.



COL LEGNO

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

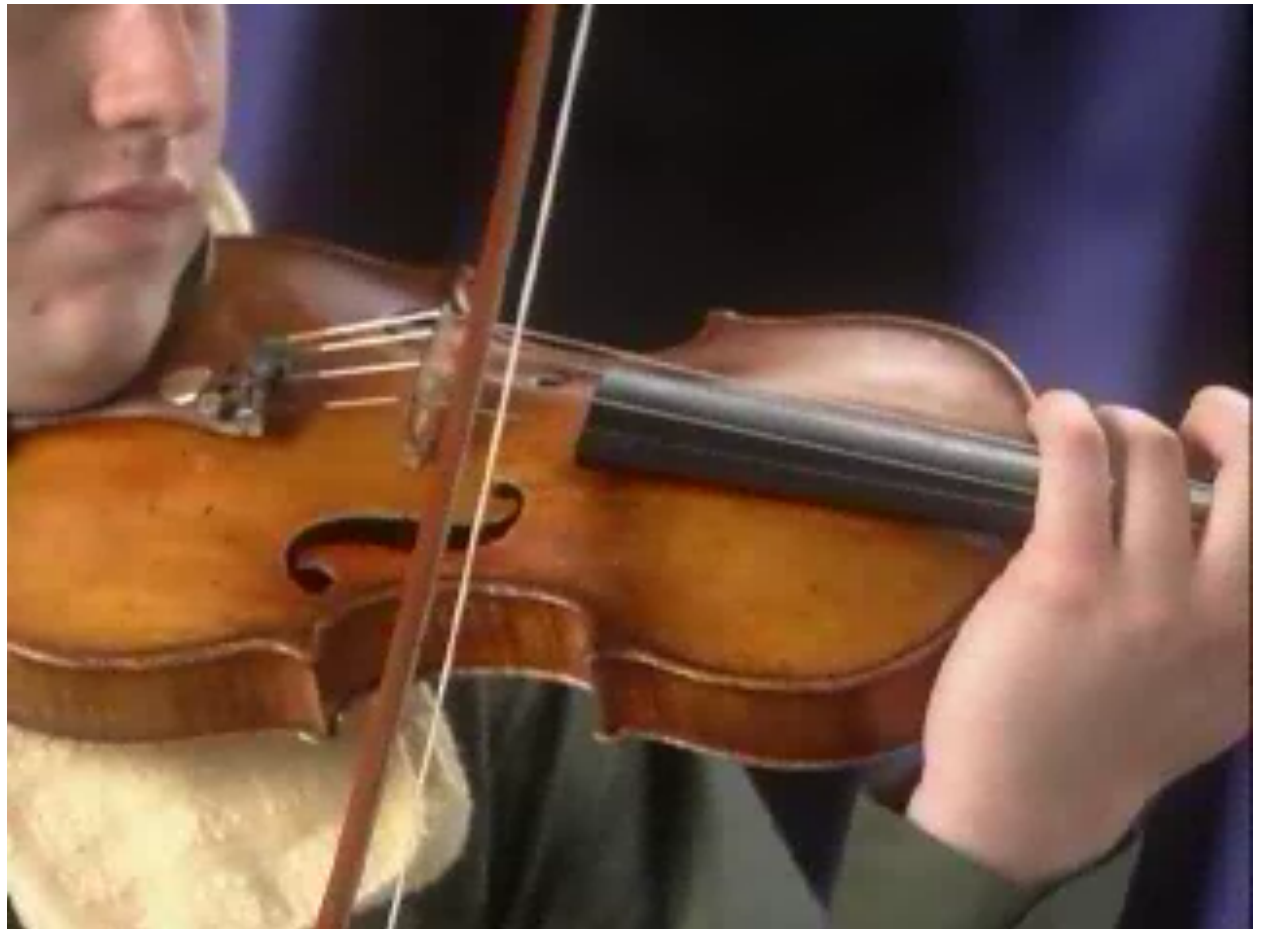
Sehr langsam
col legno

Vln. *pp*



The image shows a musical score for a violin part. It is in 2/4 time and features a treble clef. The key signature has two sharps (F# and C#). The tempo is marked 'Sehr langsam' and the performance instruction is 'col legno'. The dynamics are marked 'pp' (pianissimo). The notation consists of a single staff with several measures of music, including chords and individual notes.

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

Allegro
frappez avec les bois de l'archet

444

Vln. 1

Vln. 2

Vla.

(col legno battuta)

Vlc. 1

Vlc. 2

D.B.

mf

pizz.

pp

pp

pp

tr

tr



450

Vln. 1

Vln. 2

Vla.

Vcl. 1

Vcl. 2

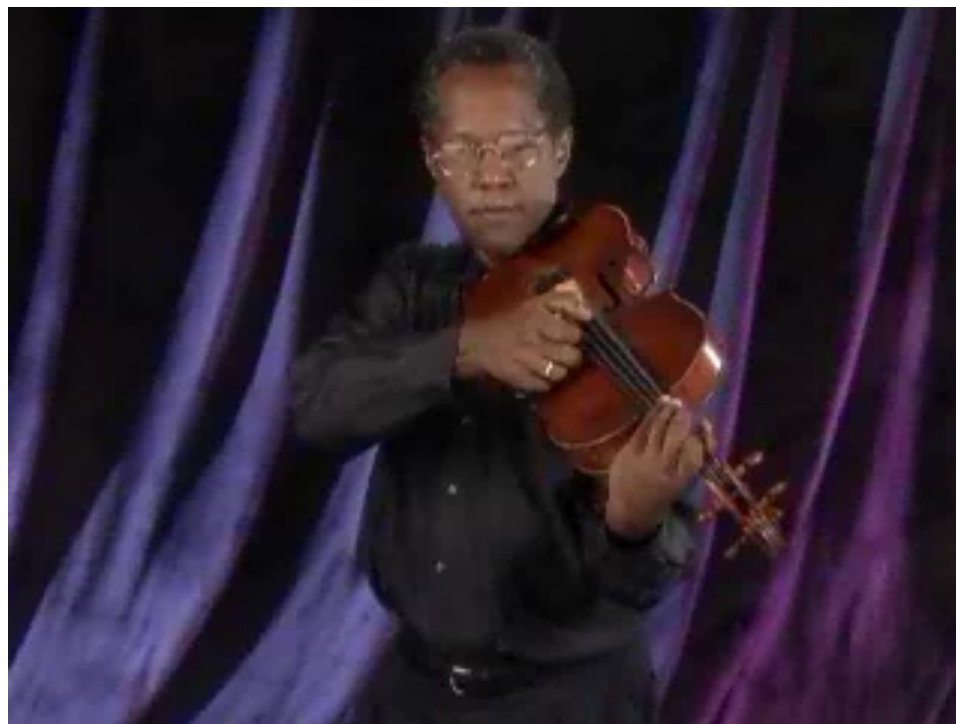
D.B.

Detailed description: This is a page of a musical score for a string ensemble, starting at measure 450. The score is arranged in six staves. The first two staves are for Violins 1 and 2, both in treble clef. The third staff is for Viola, in alto clef. The fourth and fifth staves are for Violas 1 and 2, both in bass clef. The sixth staff is for Double Bass, also in bass clef. The music consists of six measures. The Violin parts feature rapid sixteenth-note passages. The Viola part has a melodic line with some trills. The Violoncello and Double Bass parts provide a harmonic foundation with slower-moving lines and some trills. The page number '450' is written at the top left of the first staff.

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*.



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

Adagio

The musical score consists of five staves:

- Vln. 1:** Treble clef, starts with a whole rest, then a half note G4, followed by a half note A4. Dynamics: *fp*, *dim.*, *p*.
- Vln. 2:** Treble clef, starts with a whole rest, then a half note G4, followed by a half note A4. Dynamics: *fp*, *dim.*, *p*.
- Vla.:** Alto clef, starts with a half note G3, followed by a half note A3. Dynamics: *p*, *fp*, *dim.*, *p*. Includes a *div.* (divisi) marking.
- Vlc.:** Bass clef, starts with a half note G2, followed by a half note A2. Dynamics: *p*, *fp*, *dim.*, *p*.
- D.B.:** Bass clef, starts with a half note G2, followed by a half note A2. Dynamics: *p*, *fp*, *dim.*, *p*.

Articulation and performance instructions include *pizz.* (pizzicato) for the strings in the final measure and *div.* (divisi) for the Viola part.



7 string. poco a poco

Vln. 1

Vln. 2

Vla.

Vlc.

D.B.

f

cresc.

12

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

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

Alla bulgarese
a tempo

54

Vln. 1

Vln. 2

Vla.

Vlc.

mf

mp

p

mf

mp

p

mf

mp

p

arco

mf

mp

p

+ pizz.

+ pizz.

+ pizz.

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

Allegretto

56

Vln. 1

Vln. 2

Vla.

Vlc.

sf

ben marcato



60

Vln. 1

Vln. 2

Vla.

Vlc.

cresc.

cresc.

cresc.

cresc.

I

IV

f

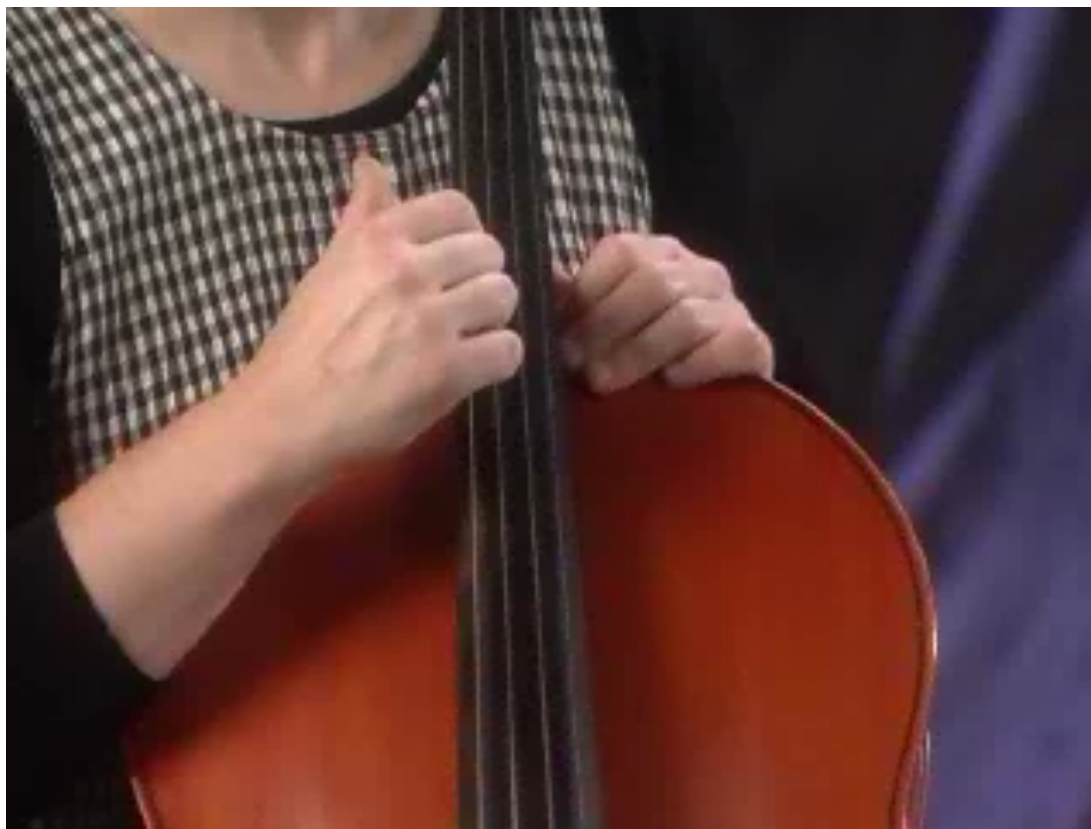
f

f

f

The image shows a musical score for four instruments: Violin 1 (Vln. 1), Violin 2 (Vln. 2), Viola (Vla.), and Violoncello (Vlc.). The score is in G major and 4/4 time. It starts at measure 60. The Violin 1 part has a first ending (I) and a second ending (IV). The Violin 2 part has a first ending (I) and a second ending (IV). The Viola and Violoncello parts have a first ending (I) and a second ending (IV). The score is marked with 'cresc.' and '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

accel al Presto (♩ = c. 134–146)

5

Vln. 2

put the bow aside

pizz.

f *dim.*

sempre sim.

pp

punta d'arco

Vla.

put the bow aside

pizz.

f *dim.*

sempre sim.

pp

Vlc.

put the bow aside

pizz.

f *dim.*

pp

pizz.

D.B.

f

pp



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 retirar-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.



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

Adagio
con sordino

13

Vln. 1

Vln. 2

Vla. pizz.

Vlc. pizz.

arco

arco



16

Vln. 1

Vln. 2

Vla.

Vlc. 1

Vlc. 2

senza sordino

senza sordino

1.

2.

D.B. tacet

Detailed description: This is a page of a musical score, numbered 16 at the top left. It features five staves. The top two staves are for Violin 1 (Vln. 1) and Violin 2 (Vln. 2), both in treble clef with a key signature of two sharps (F# and C#). The third staff is for Viola (Vla.) in bass clef. The bottom two staves are for Violoncello 1 (Vlc. 1) in treble clef and Violoncello 2 (Vlc. 2) in bass clef. The key signature is consistent across all staves. The score begins with a rest for the first two staves. The Viola part starts with a first ending (marked '1.') and continues with a second ending (marked '2.') in the lower register. The Violoncello parts provide a harmonic and rhythmic foundation. The instruction 'senza sordino' appears on the right side of the Violin staves. At the bottom left, 'D.B. tacet' is written under the Violoncello 2 staff.

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.



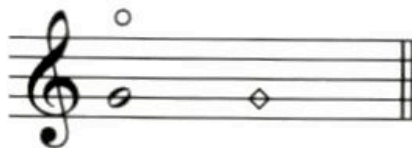
Fund.



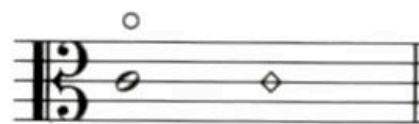
Fund.

SEGUNDO PARCIAL

Violin
Sul G or IV



Viola
Sul C or IV



Cello
Sul C or IV

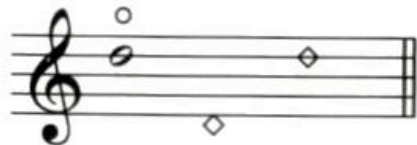


Double Bass
Sul E or IV

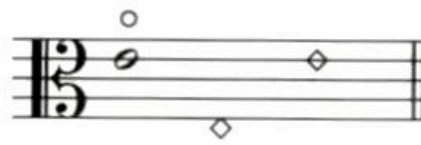


TERCEIRO PARCIAL

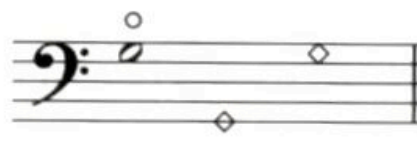
Violin
Sul G



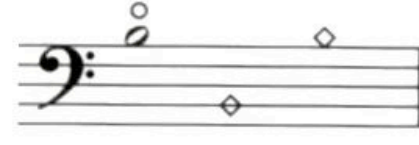
Viola
Sul C



Cello
Sul C

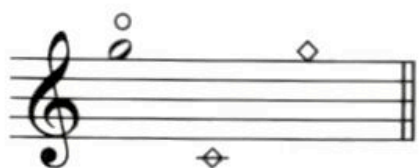


Double Bass
Sul E

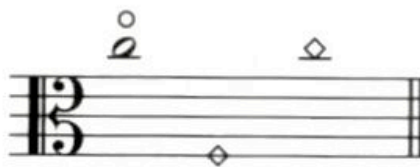


QUARTO PARCIAL

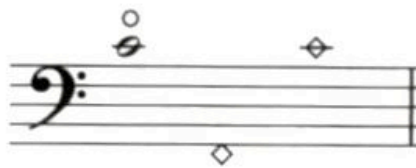
Violin
Sul G



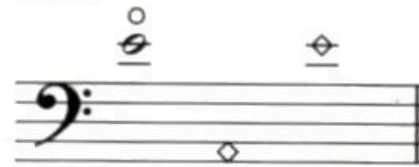
Viola
Sul C



Cello
Sul C

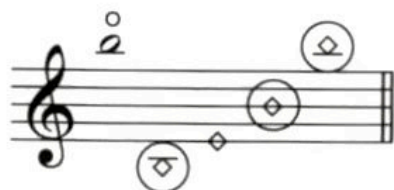


Double Bass
Sul E

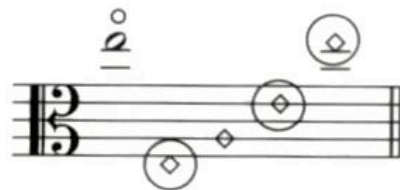


QUINTO PARCIAL

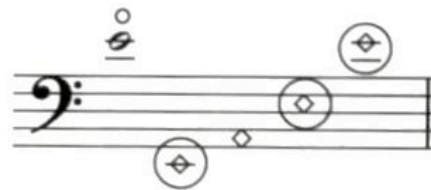
Violin
Sul G



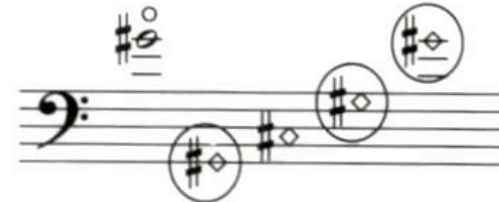
Viola
Sul C



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).

Violin

On the E string

The image shows a musical staff for violin, labeled "Violin" and "On the E string". It illustrates the notation for natural harmonics on the E string. The staff starts with the open string (labeled "open"). Then, it shows frets 2, 3, 4, and 5. For each fret, there are two alternative notations: a note with a small circle above its head, and a diamond shape placed on the staff line corresponding to the node. The notes for fret 2 are G4 and B4; for fret 3, A4 and C5; for fret 4, B4 and D5; and for fret 5, C5 and E5. The diamond shapes are placed on the lines for G4, A4, B4, and C5 respectively.


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

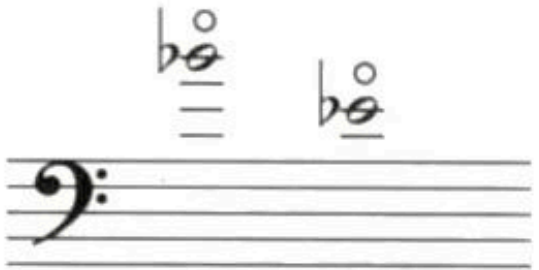

Harmônicos artificiais

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.

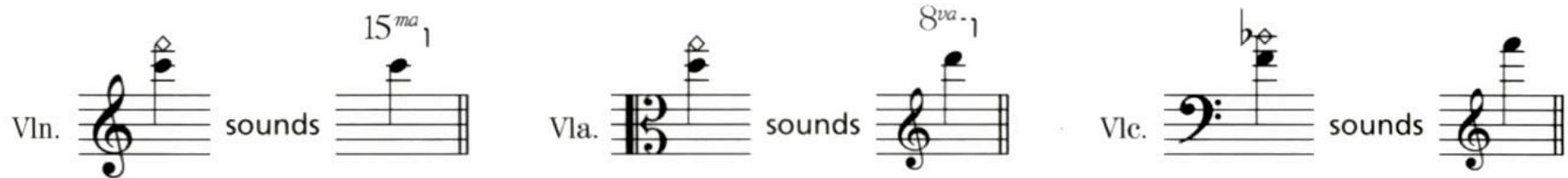
Notação de harmônicos artificiais

Vln.  sounds 

Vla. 

Vlc.  should be notated 

Última região onde são funcionais os harmônicos artificiais



Cordas - Harmônicos Artificiais

The diagram illustrates the production of artificial harmonics on a string instrument. It consists of two staves:

- Soa (Sounding):** The top staff shows the notes that are heard. From left to right, they are: a whole note on the second line (D4), a whole note on the second space (F4), a whole note on the third line (A4), a whole note on the third space (C5), and a whole note on the fourth line (E5).
- Escreve (Written):** The bottom staff shows the fingering and string numbers for each harmonic. From left to right:
 - 8^a: Fingering 1 (diamond) on the 8th string.
 - 5^a: Fingering 2 (diamond) on the 5th string.
 - 4^a: Fingering 3 (diamond) on the 4th string.
 - 3^a: Fingering 4 (diamond) on the 3rd string.
 - 3^a_m: Fingering 4 (diamond) on the 3rd string with a flat sign.

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

$\text{♩} = 160$

Vln. 1

p



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

Andante

Vln. solo

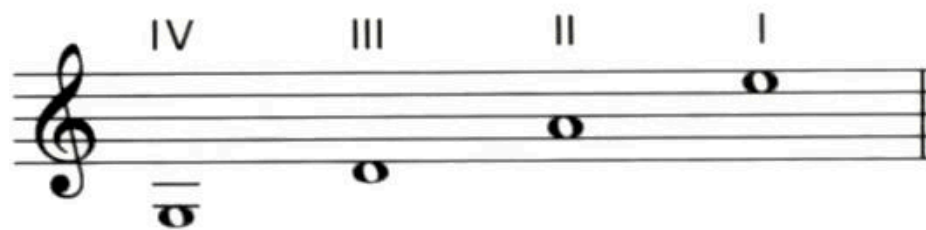
Solo



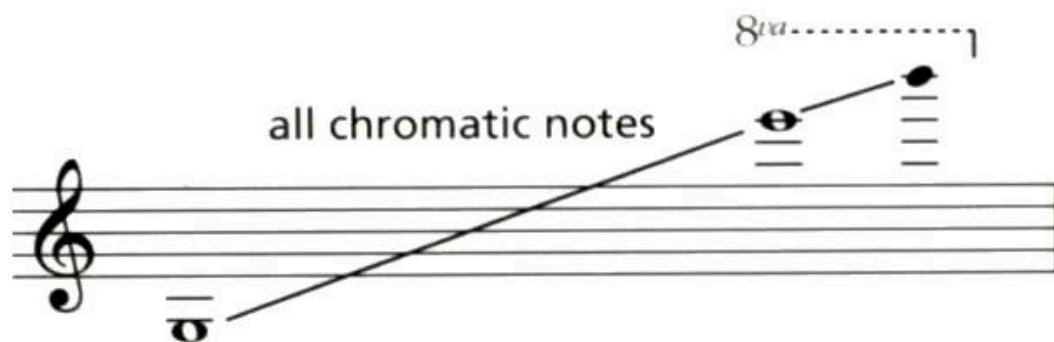
Aspectos individuais

Violino

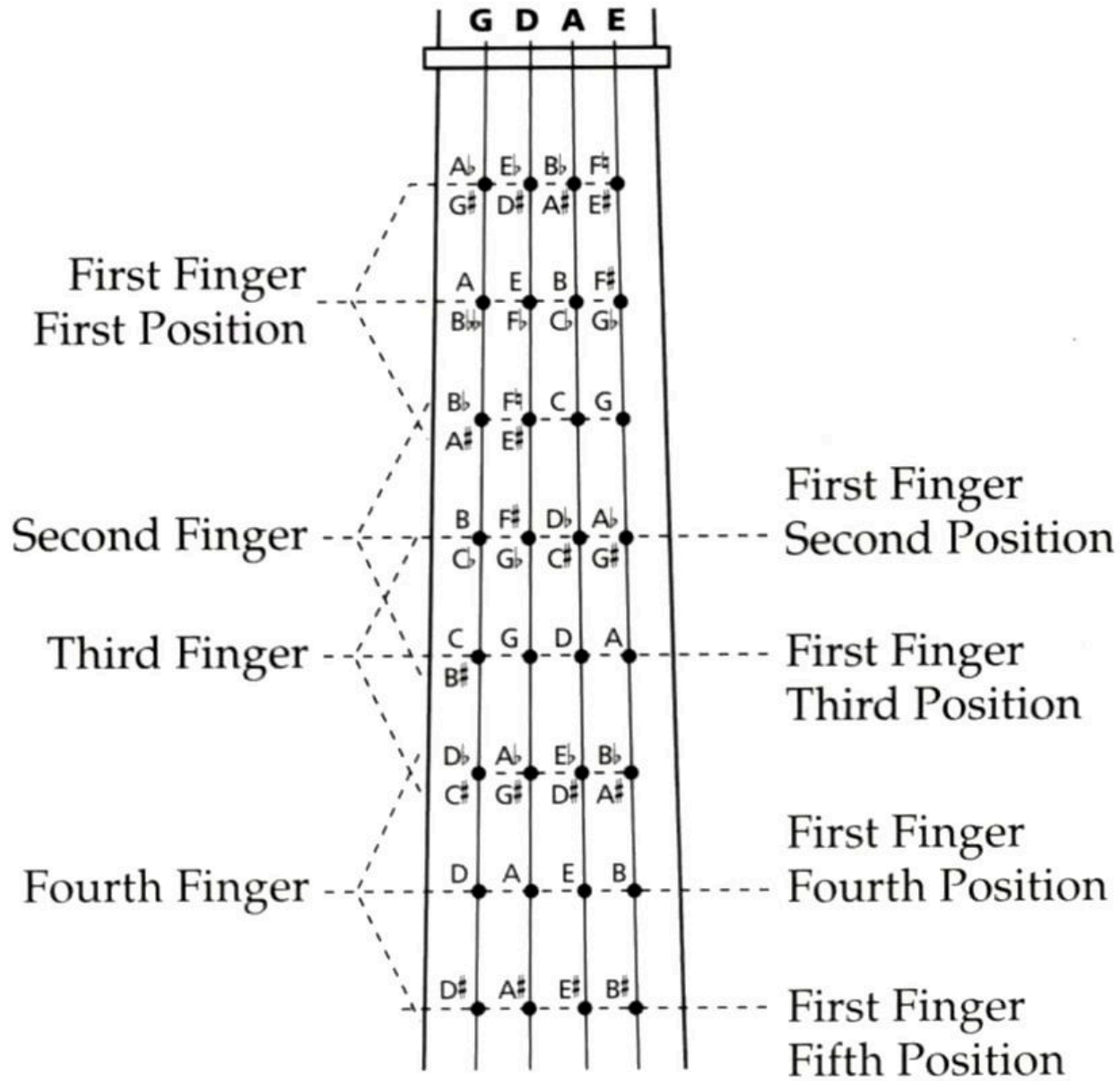
AFINAÇÃO



TESSITURA



DEDILHADO



PASSAGENS TOCADAS EM UMA ÚNICA CORDA

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

111 **Andante** Sul G

Vln. 1

116

The musical score shows two staves of music for Violin 1. The first staff starts at measure 111 and ends at measure 115. The second staff starts at measure 116 and ends at measure 119. The tempo is marked 'Andante' and the performance instruction is 'Sul G'. The key signature has one sharp (F#) and the time signature is 12/8. Dynamics include *mf*, *sf*, *f*, and *mf*. Articulations include accents (>) and slurs.



PASSAGENS TOCADAS EM UMA ÚNICA CORDA

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

Vln. *Sul D* *I*

p

4

The image displays a musical score for a violin part. It consists of two staves of music. The first staff is marked 'Vln.' and 'Sul D' (Sul ponticello), with a dynamic marking of 'p' (piano) and a first finger fingering '1'. The second staff is marked with the number '4', indicating a fourth finger fingering. The music is written in G major (one sharp) and 6/8 time. The first staff contains a melodic line with various rhythmic patterns, including eighth and sixteenth notes, and rests. The second staff continues the melodic line with similar rhythmic patterns. A small speaker icon is located in the bottom right corner of the page.

PASSAGENS TOCADAS EM UMA ÚNICA CORDA

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

Largamente
Sul A

Vln. 1

f



PASSAGENS TOCADAS EM UMA ÚNICA CORDA

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

Allegro
Sul E

Vln. 1

9

ff

14



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

Sul E

Vln. 1

5

pp

tr

3

3

3

9

tr

tr

3

3

3



HARMÔNICOS

QUARTA

Actual harmonics

Lightly touched note
Fingered note

0 1 1 1 0 1 1 1 0 1 1 1 0 1 1

3 4 4 4 3 4 4 4 3 4 4 4 3 4 4

8va

QUINTA

Actual harmonics

Lightly touched note
Fingered note

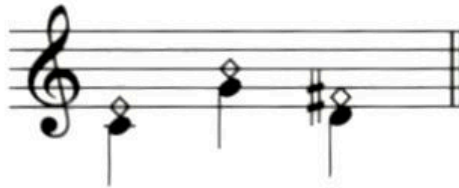
0 1 1 1 1 1 1 1

TERÇA MAIOR

Actual harmonics



Lightly touched note
Fingered note

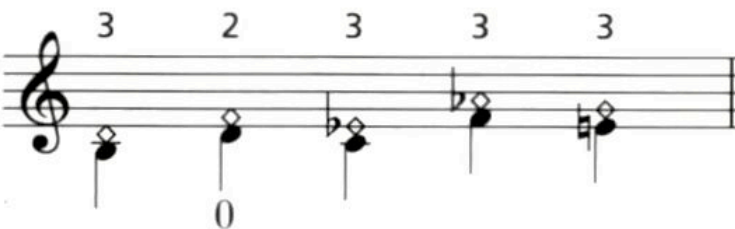


TERÇA MENOR

Actual harmonics



Lightly touched note
Fingered note



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

128

Allegro

Vln. 1

Vln. 2



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

rit. . . . noch langsamer (♩ = ca. 60)

8va.

20 mit Dmpf. *pp* *verlöschend*

Vln. Solo

Vln. 1

Vln. 2

Vla.

Vlc. 1

Vlc. 2

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

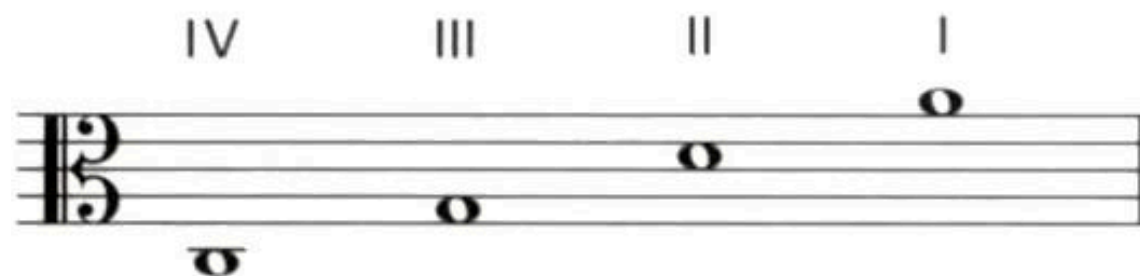
The image shows a musical score for strings from Stravinsky's *Le Sacre du printemps*, measures 101-104. The score is written for a string ensemble and includes the following parts:

- Vln. 1 div.:** Violin 1, divided into 6 parts (measures 1-6).
- Vln. 2 div.:** Violin 2, divided into 4 parts (measures 1-4).
- Vla. div.:** Viola, divided into 3 parts (measures 1-3).
- Vlc. 3 soli:** Violoncello, 3 parts (measures 1-3).
- gli altri Vlc. unis.:** Other cellos, unison (measures 1-3).

The score is in 6/4 time and features complex rhythmic patterns, including accents and slurs. The key signature is one sharp (F#). The measures are numbered 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104.

Viola

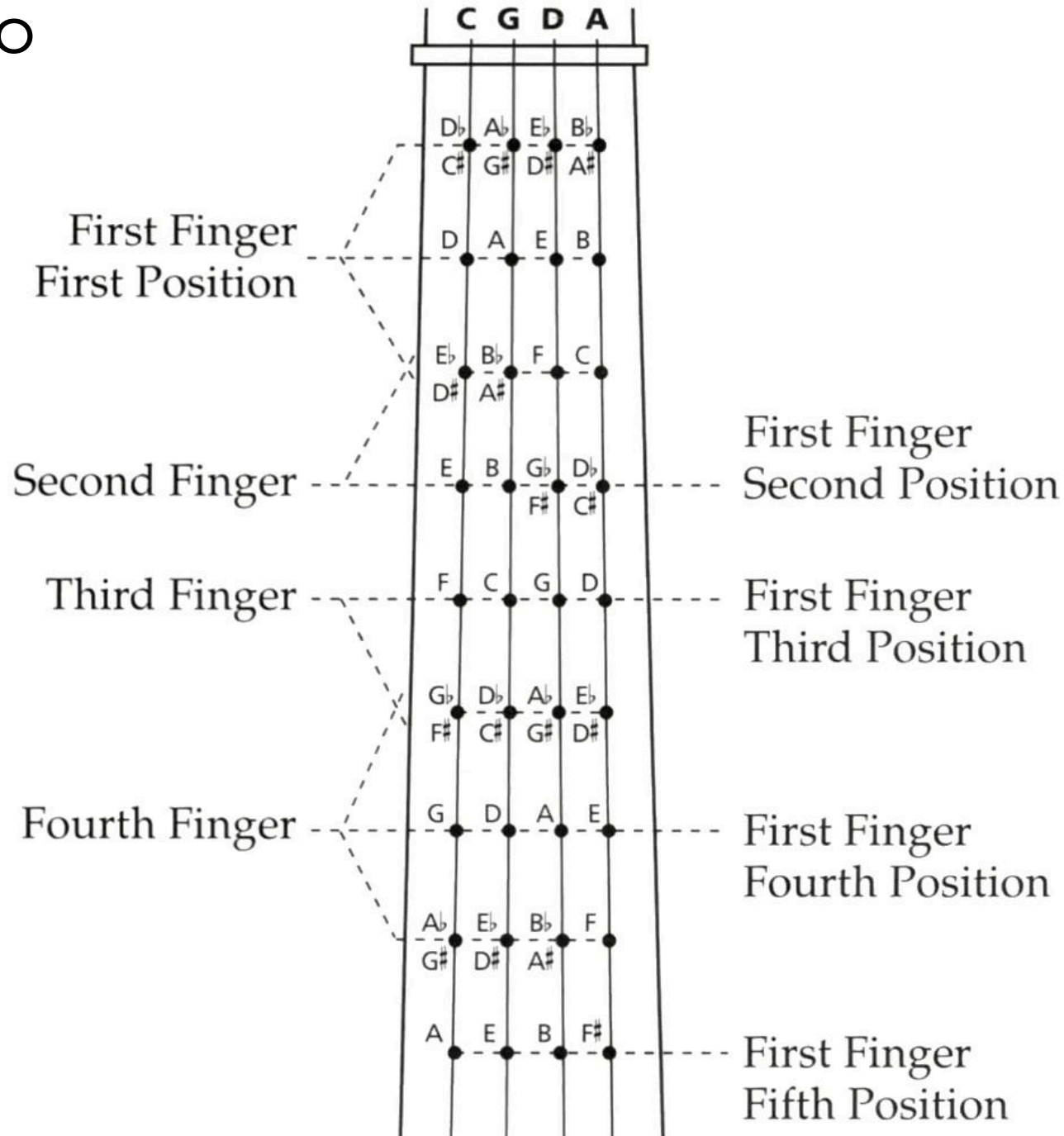
AFINAÇÃO



TESSITURA



DEDILHADO



PASSAGENS TOCADAS EM UMA ÚNICA CORDA

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



15 *Sehr breit* *Cadenza*

Vla. *f* *f* *pp*

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



42 *Andante*

Vla. *f cantabile*

47

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

Bewegt

48

Vla.

mf *f*

51

55



Corda A

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

Fast

45

Vln. 1 *div.*

Vln. 2 *div.*
pizz. *arco*

Vla. *pizz.*

48

Vln. 1

Vln. 2 *unis.*

Vla.



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



Fast

12 *div.* $\overset{3}{\cdot}$ $\overset{3}{\cdot}$ $\overset{3}{\cdot}$ $\overset{3}{\cdot}$

Vln. 1

sempre f

Vln. 2

div. $\overset{3}{\cdot}$ $\overset{3}{\cdot}$ $\overset{3}{\cdot}$ $\overset{3}{\cdot}$

Vla. *div.* $\overset{3}{\cdot}$ $\overset{3}{\cdot}$ $\overset{3}{\cdot}$ $\overset{3}{\cdot}$ *f*

16

Vln. 1

Vln. 2

Vla.

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

Allegro

155

Vln. I

Vla.

ff *sf* *sf*

ff *sf* *sf*



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

Andante

1

Vla.

Vlc.

p dolce

p dolce

6

Vla.

Vlc.

f *p* *f* *p*

f *p* *f* *p*

f *p* *f* *p*

f *p* *f* *p*



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

22 **Slowly**

Vla.
solo

p espr. *poco cresc.* *dim.*



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



1 **Rather free**

Vla. solo

mf 3

3 *pp*

7 **lebhaft** *espr.* *f* *p* 3 3

11 *mf*

15 *p* 3 3 *pp*

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

Andante con moto (♩ = 60)

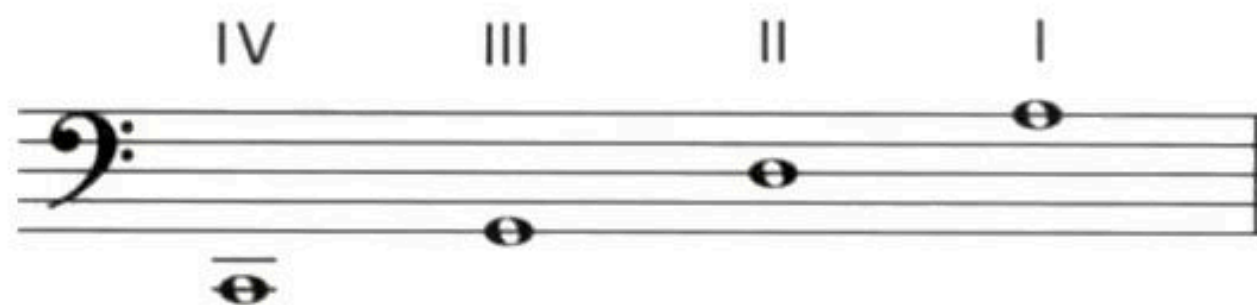
6 Vla. soli

The musical score consists of six staves for Violas soli. The key signature is three sharps (F#, C#, G#). The tempo is Andante con moto with a quarter note equal to 60 beats per minute. The score is divided into four measures with time signatures of 4/4, 2/4, 4/4, and 3/4. The first and third measures are in 4/4, the second in 2/4, and the fourth in 3/4. The music is characterized by long, sweeping melodic lines with slurs and fermatas. The dynamic marking is *molto cant. ma non f*, indicating a cantabile style with a moderate dynamic level. The notation includes various note values, rests, and articulation marks.

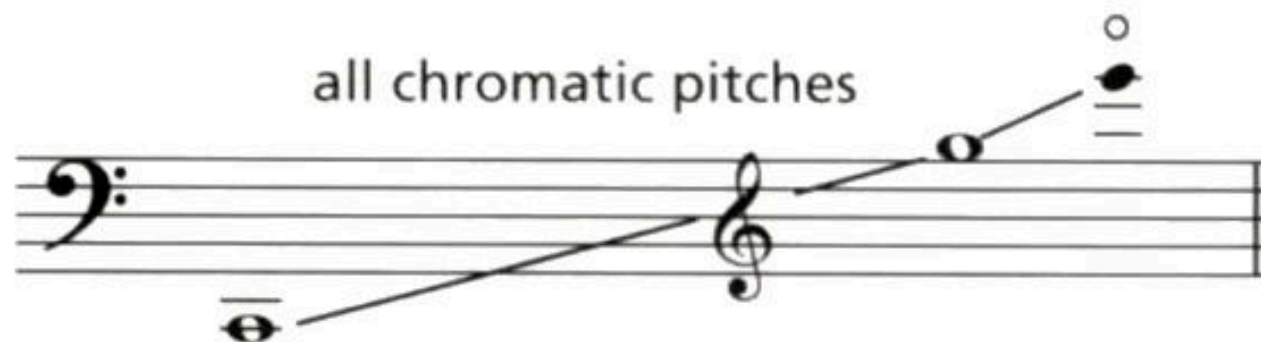


Violoncelo

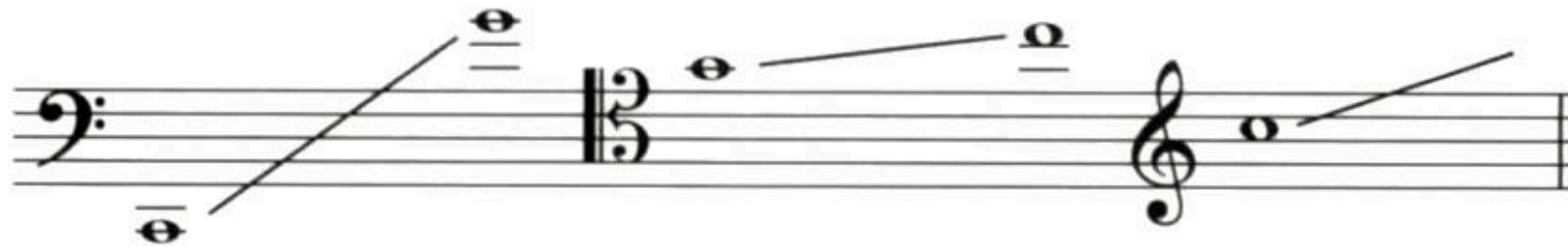
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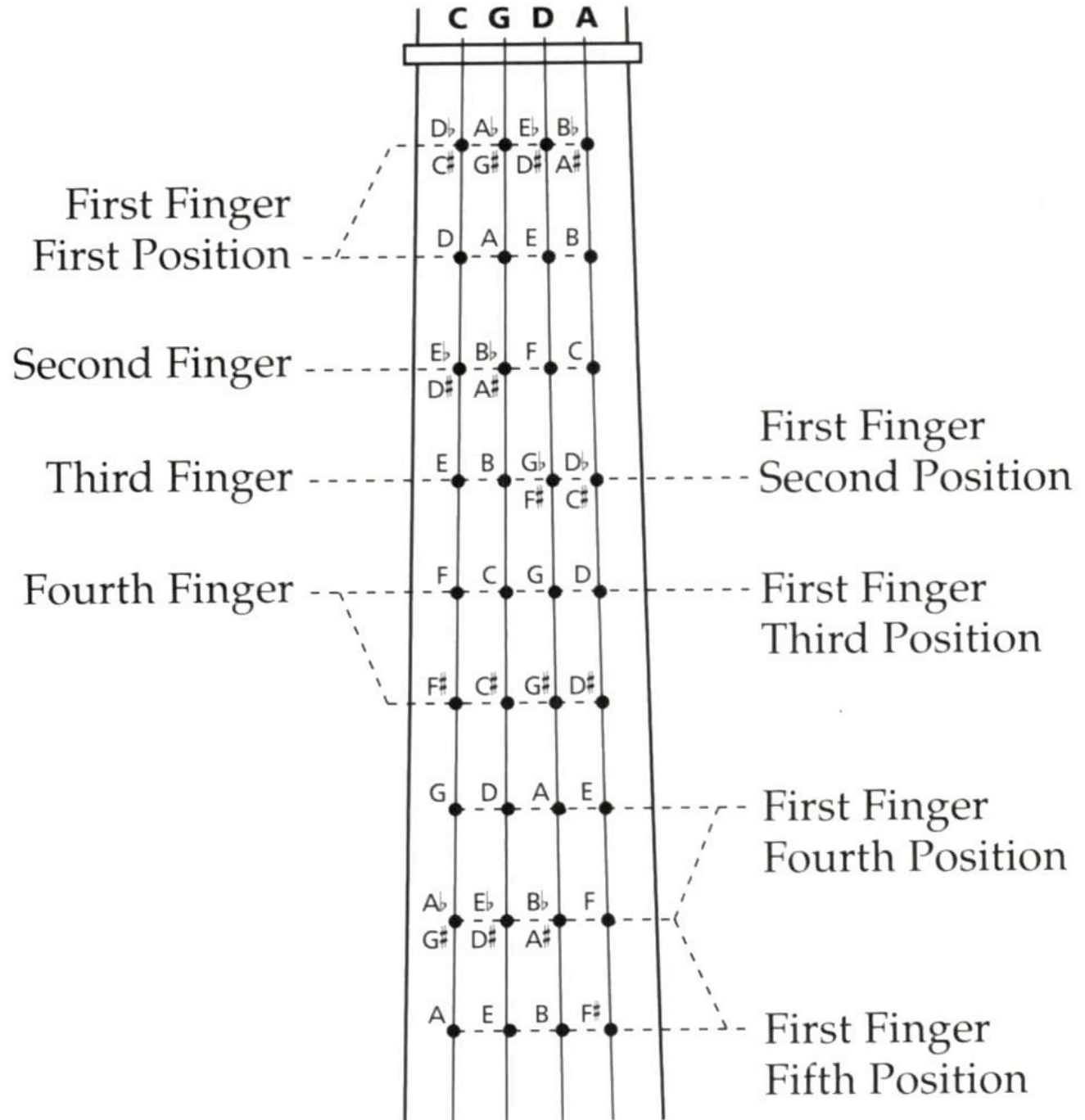
TESSITURA



CLAVES



DEDILHADO



HARMÔNICOS

a. NATURAL HARMONICS

Actual harmonics

Third string

Lightly touched note

Actual harmonics

Fourth string

Lightly touched note

b. NATURAL AND ARTIFICIAL HARMONICS

Actual harmonics

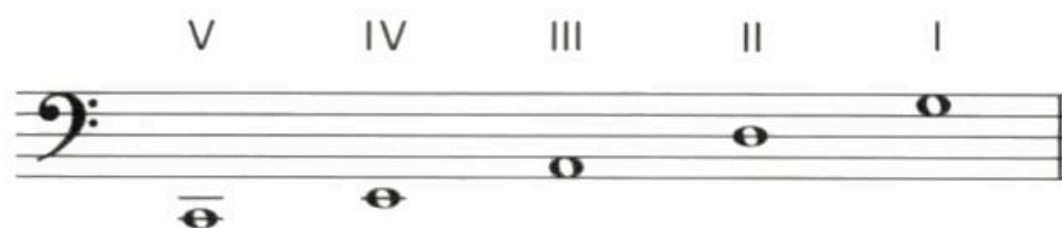
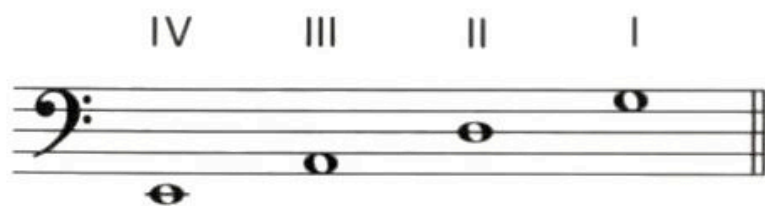
1 2 4 4 1 3 3 3 3 3 3 3 3 3

0 0 0 0 0 3 3 3 3 3 3 3 3 3

1 3 3 3 3 3 3 3 3

Contrabaixo

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NOTAÇÃO

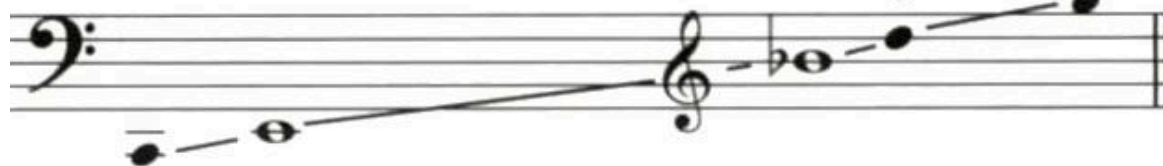


sounds



TESSITURA

all chromatic pitches



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

Allegro

319

Vln. 1

Vln. 2

Vla.

Vlc.
D.B.

pp

pp

pp

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

Vlc.

D.B.

pp

pp

etc.

Transcrevendo do piano para cordas

SIMULANDO UM PEDAL

PIANO ORIGINAL

Musical score for piano in 4/4 time. The right hand plays a melody of eighth notes: G4, A4, B4, C5, D5, E5, F5, G5. The left hand plays a bass line: G3, F3, E3, D3, C3. A fermata is placed over the first two notes of the right hand. A 'Ped.' marking with a horizontal line is below the left hand, indicating a sustained pedal effect.

TRÊS VERSÕES PARA CORDAS (tocadas sem pausa)



1

Musical score for strings in 4/4 time, version 1. Vln. 1: Rest, then eighth notes G4, A4, B4, C5, D5, E5, F5, G5. Vln. 2: Rest, eighth note G4, quarter note A4, quarter note B4. Vla.: Divisi (div.), quarter note G4, quarter note A4, quarter note B4, quarter note C5. Vlc.: Quarter note G3. D.B.: Quarter note G3.

2

Musical score for strings in 4/4 time, version 2. Vln. 1: Rest, then eighth notes G4, A4, B4, C5, D5, E5, F5, G5. Vln. 2: Rest, eighth note G4, quarter note A4, quarter note B4. Vla.: Divisi (div.), quarter note G4, quarter note A4, quarter note B4, quarter note C5. Vlc.: Divisi (div.), quarter note G3, quarter note A3, quarter note B3, quarter note C4. D.B.: Quarter note G3.

3

Musical score for strings in 4/4 time, version 3. Vln. 1: Eighth note G4, eighth note A4, quarter note B4, quarter note C5, quarter note D5, quarter note E5, quarter note F5, quarter note G5. Vln. 2: Rest, eighth note G4, quarter note A4, quarter note B4. Vla.: Divisi (div.), quarter note G4, quarter note A4, quarter note B4, quarter note C5. Vlc.: Quarter note G3. D.B.: Quarter note G3.

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

PIANO ORIGINAL

Nicht zu geschwind

Musical score for Piano Original. The score is in 3/4 time and B-flat major. It consists of two measures. The top staff is labeled 'Voice' and contains a whole rest. The bottom two staves are labeled 'Piano'. The first measure features a piano (*p*) dynamic with a tremolo effect. The second measure features a fortissimo piano (*fp*) dynamic with a crescendo hairpin.

DUAS VERSÕES PARA CORDAS (tocadas sem pausa)

Musical score for two string versions, labeled 1 and 2. Both are in 3/4 time and B-flat major. Version 1 is marked 'Not too fast' and includes dynamics *p* and *fp*, with 'pizz.' and 'arco' markings. Version 2 is also marked 'Not too fast' and includes dynamics *p* and *f*, with 'pizz.' and 'sf' markings. The instruments are Vln. 1, Vln. 2, Vla., Vlc., and D.B.



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

PIANO ORIGINAL

Andante

Voice

sehr zart (delicatamente)

p

Birg, o

The image shows the first three measures of the original piano and voice score for Brahms' 'An ein Veilchen'. The tempo is marked 'Andante'. The voice part is in a soprano clef with a treble clef and a key signature of one flat (B-flat major). The piano accompaniment consists of two staves, treble and bass clef, with a treble clef and a key signature of one flat. The piano part features a delicate, flowing melody in the right hand and a supporting bass line in the left hand, both marked with a piano (*p*) dynamic. The lyrics 'Birg, o' are written below the voice staff.

VERSÃO PARA CORDAS

Andante

Vln. 2

con sord.

p

Vla.

con sord.

p

Vlc.

con sord.

p

D.B.

con sord.

p

The image shows the first three measures of the string version of 'An ein Veilchen'. The tempo is marked 'Andante'. The score is for four string parts: Violin 2 (Vln. 2), Viola (Vla.), Violoncello (Vlc.), and Double Bass (D.B.). Each part is marked with a piano (*p*) dynamic and 'con sord.' (con sordina), indicating that the strings should play with mutes. The Vln. 2 and Vla. parts have a melodic line, while the Vlc. and D.B. parts provide a harmonic foundation with sustained notes.



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

PIANO ORIGINAL

Lebhaft

Voice

O lieb - li - che Wan - gen, ihr macht mir Ver -

Piano

mf

The image shows the first three measures of the original piano and voice score. The music is in G major (one sharp) and 6/8 time. The tempo is marked 'Lebhaft'. The voice part has the lyrics 'O lieb - li - che Wan - gen, ihr macht mir Ver -'. The piano accompaniment features a melody in the right hand and a bass line in the left hand, with a mezzo-forte (*mf*) dynamic marking.

VERSÃO PARA CORDAS

Lively

Vln. 1

Vln. 2

Vla.

Vlc.

D.B.

mf

The image shows the first three measures of the string version of the piece. The music is in G major (one sharp) and 6/8 time. The tempo is marked 'Lively'. The score includes parts for Violin 1, Violin 2, Viola, Violoncello, and Double Bass. The dynamic marking is mezzo-forte (*mf*).

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

PIANO ORIGINAL

Allegro agitato

Voice

Piano

pp

Monte, é - cu -

VERSÃO PARA CORDAS

Allegro agitato

Vln. 1

Vln. 2

Vla.

Vlc.

D.B.

pp

pp

non div.

pp

pp



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