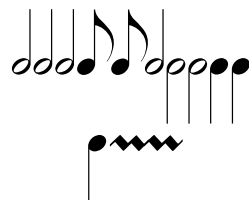


Repertories with special needs vs. Common Western Notation (CMN)

Music 253/CS 275A
Stanford University

Written representations of music

- Common Western notation (CMN)
 - References **specific** pitches and **relative** durations
 - Assumes **regularity of meter**
 - Has numerous **graphical** conventions
 - Is **flexible** and **extensible** (up to a point)
 - Potential includes hundreds (or thousands) or **graphical objects**
 - Has numerous **organizational** conventions (scores, parts, etc.)
 - **Meaning** of given object often **conferred contextually**

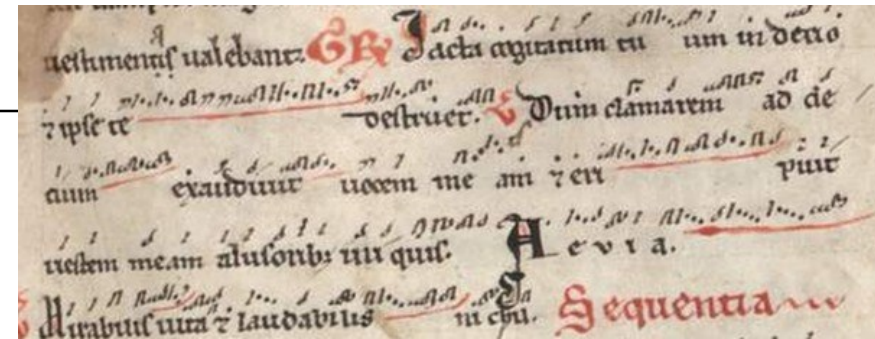


Written representations of music

□ Western non-common

- **A. Neumes:** specifies relative pitches, often in *patterned* groups associated with particular words or syllables
- **B. Mensural notation:** differentiates multiple *organizational hierarchies* for meter and duration
- **C. Tablature:** pitch and note onset information tied to *gestural* info
- **D. Music since 1950:** arbitrary requirements for *irregular* meter, unusual tunings, unusual gestures
- **E. Braille MN:** *tactile output* of binary representation; *several* methods of organization and national dialects

A. Neumes



From the *Carmina Burana*

(Bavarian State Library [Hss Cgm 4660](https://nbn-resolving.org/urn:nbn:de:hbz:5:1-63868-p0011-9), Munich)

<http://daten.digital-sammlungen.de/~db/0008/bsb00085130/images/index.html?id=00085130&groesser=&fip=eayaxseayafsdrrxsxdsydxsdyztsxsfsdr&no=1&seite=191>

- *Staves*: usually 4-line
- *Notes*: shapes not standardized
- *Durations*: not explicit
- *Lyrics* (lang.): mainly Latin
- *Lyrics* (script): special fonts, diacriticals

Mensuration signs

Measurement, grouping

Mensuration signs

Tempus	Prolatio	Sign	Semibreves	Minims	Modern		
					1:4	1:2	1:1
perfectum	maior	⊙	◊◊◊	⏏⏏⏏ ⏏⏏⏏ ⏏⏏⏏	9/8	9/4	9/2
perfectum	minor	○	◊◊◊	⏏⏏⏏ ⏏⏏⏏	3/4	3/2	3/1
imperfectum	maior	⊙	◊◊	⏏⏏⏏ ⏏⏏⏏	6/8	6/4	6/2
imperfectum	minor	⊙	◊◊	⏏⏏ ⏏⏏	2/4	2/2	2/1

B. Mensural notation

Metrical hierarchies

Missa Alleluia
1. Kyrie

Kyr ie I

Pierre de la Rue

Discantus

Cantus

Tenor

Bassus1

Bassus2

Josquin, “perfect”

Requiem
1 Introit

Dufay: imperfect

Hic iocundus sumit mundus

Discantus

Contratenor

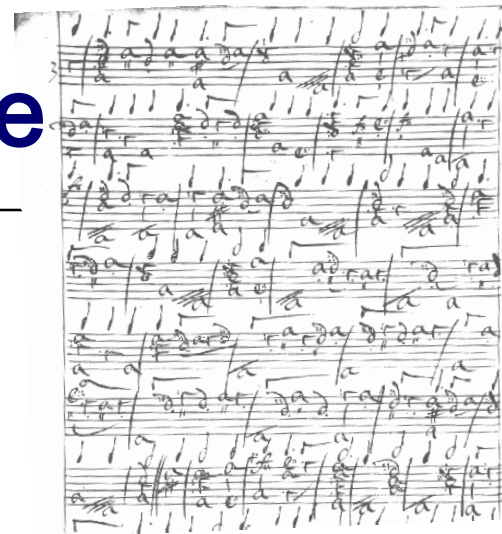
Ockeghem: Cut

Cantus

Contratenor

Tenor

C. Fretted-instrument tablature



Six-string grid
Duration separated
Many graphical dialects



Lute

C. Tablature (guitars)

Electric bass: 4-string



Acoustic 6-string



Russian 7-string



French 5-string



Guitarron (Mariachi)

C. Classical guitar

ALBORADA

Andalusian

Andante



Plaisir D'amour

Fingerstyle Guitar Solo

Jean Paul Égide Martini (1741-1816)

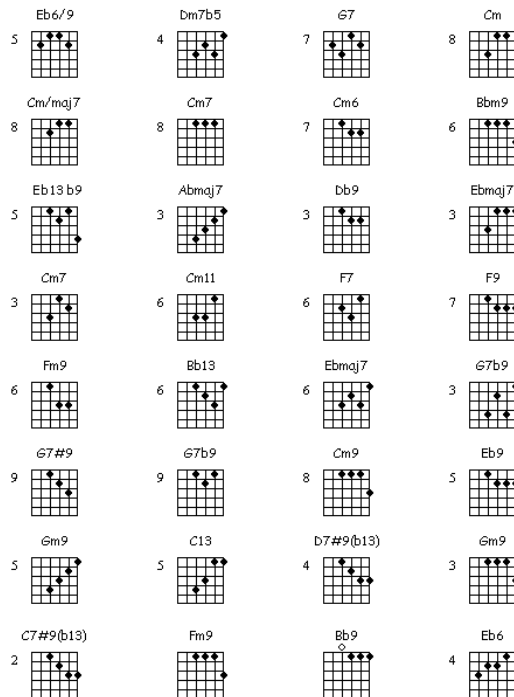
Arranged Bill Tyers

Slow Rock ♩ = 95



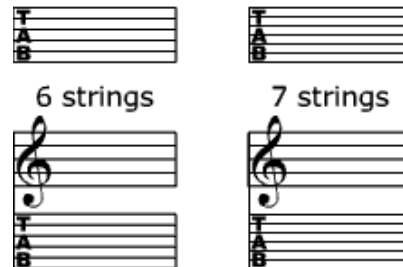
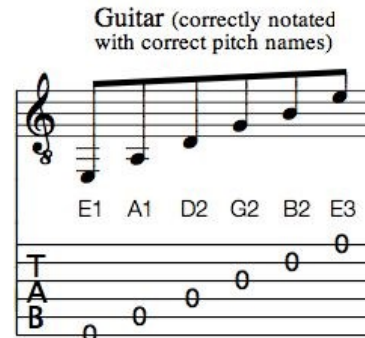
C. Tablature as....

- As pictographs
- As numeric codes
- As other graphs



www.jazzguitar.be

CS 275A/Music 253



Bergeronette

Borjon de Scellery, Traité de la Musette



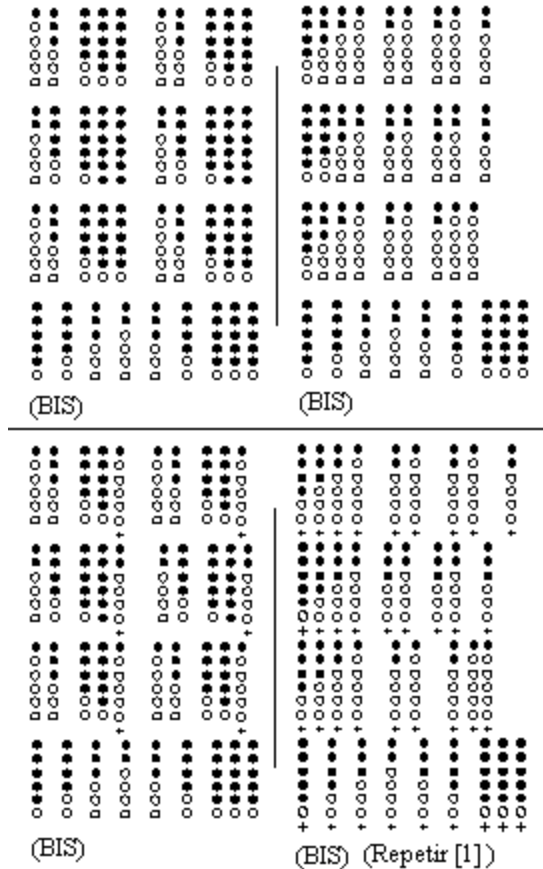
Musette tablature

http://en.wikipedia.org/wiki/List_of_guitar_tablature_software

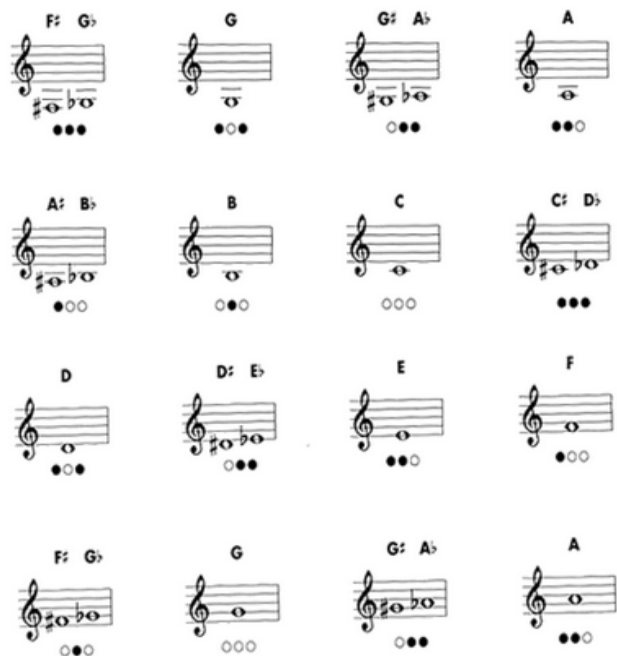
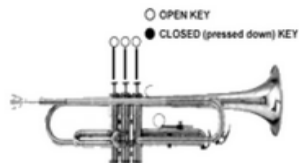
<http://en.wikibooks.org/wiki/Guitar/Tablature>

C. Wind and keyboard tablatures

Recorder tablature



C. Trumpet tablature



C. Anatolian folk instruments



CS 275A/Music 253



2016 Eleanor Selfridge-Field

Yang qin (zither)



Map showing major sites, cities, and relative locations ancient states. From *Music in the Age of Confucius*, page 115.

Neolithic Period ca.7000- 2000 B.C.

Bronze Age ca.2000-500B.C.

Shang dynasty ca. 1600-1050 B.C.

Zhou dynasty 1050-221 B.C.

Western Zhou 1050-771 B.C.

Eastern Zhou 771-221 B.C.

Warring States Period 480-221 B.C.

Qin dynasty 221-206 B.C.

Han dynasty 206 B.C.-A.D. 220

Western Jin dynasty A.D. 265-316

Tang dynasty A.D. 618-907

Song dynasty A.D. 960-1279

Northern Song A.D. 960-1127



Zhu, 5th cent. BCE



Gugin notation (tablature)

[illegible]

- Vol. number
- Seals of the owner
- Title of volume
- Tuning, method of tuning
- name of modal “preface”
- tablature of modal preface

Next page:

- title of piece
- origins of piece
- tablature for piece

D. Recent music

- Articulation marks
- Compound meters
- Polymeters
- Quarter-tones
- Off-staff presentations

Music Theory Spectrum Volume 16, Number 1, Spring 1994
 Peter H. Smith, "Brahms and Schenker: A Mutual Response to Sonata Form"
 Example 12. Brahms, C-minor String Quartet, Op. 51 No. 1, i; Tonal Structure

This musical score illustrates the tonal structure of the first movement of Brahms' C-minor String Quartet, Op. 51 No. 1. The score is written for a string quartet (Violin I, Violin II, Viola, and Cello/Double Bass). The key signature is C minor, and the time signature is 3/4. The score includes a Schenkerian analysis of the first group, showing the underlying harmonic structure with Roman numerals (I, III, V, I) and a 'Dev' (Development) section. The analysis is based on the first group, which is marked with a '3' and a '2' above the staff. The score also includes a 'Coda' section. The analysis is based on the first group, which is marked with a '3' and a '2' above the staff.

This musical score illustrates the tonal structure of the first movement of Brahms' C-minor String Quartet, Op. 51 No. 1. The score is written for a string quartet (Violin I, Violin II, Viola, and Cello/Double Bass). The key signature is C minor, and the time signature is 3/4. The score includes a Schenkerian analysis of the first group, showing the underlying harmonic structure with Roman numerals (I, III, V, I) and a 'Dev' (Development) section. The analysis is based on the first group, which is marked with a '3' and a '2' above the staff. The score also includes a 'Coda' section. The analysis is based on the first group, which is marked with a '3' and a '2' above the staff.

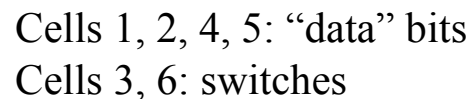
D. Systems of arbitrary complexity

Hyo-Shin Na's "Rain Study"



Typeset in SCORE by Craig Sapp (c. 2008)

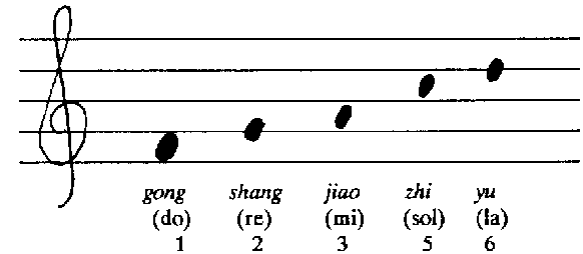
- ❑ Requires impact printing (raised “cells” of information)
- ❑ Two chapters on Braille MN in *Beyond MIDI*



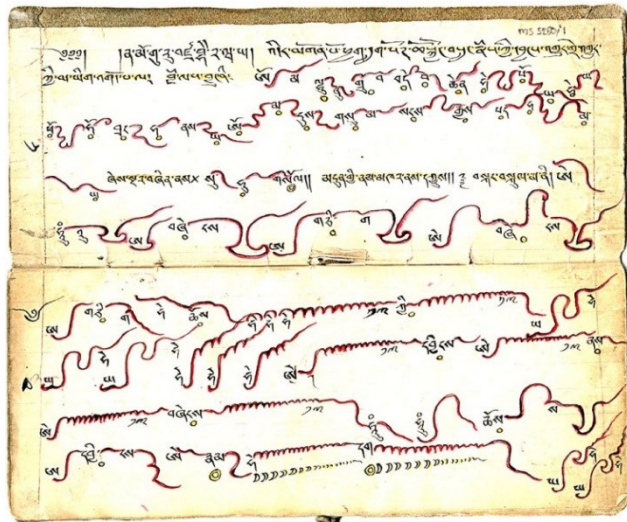
Note: Articulation marks (staccato, fermata, etc.) are shown as applied to a quarter note C (♩).

Non-Western music

- Tuning systems unpredictable
 - Ambiguities of tuning, temperament, scale degrees
- Non-Western instruments (gesture)
 - String
 - Wind
 - Percussion
 - Tuned percussion
- Different understandings of pitch and duration



Other special-needs repertoires

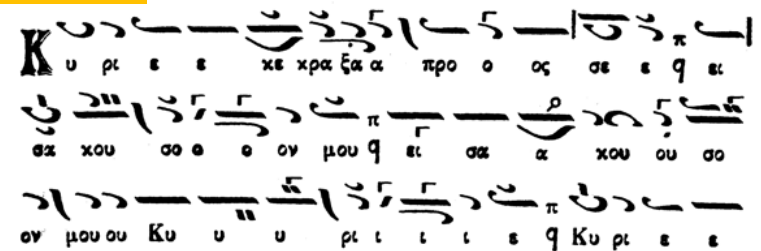


Tibetan chant

MS 5280/1
Tibetan Yang-Yig graphic music notation. Tibet, 19th c.

Cheironomic notation

Τῷ Σαββάτῳ ἑσπέρας. ᾠὴ Πα.

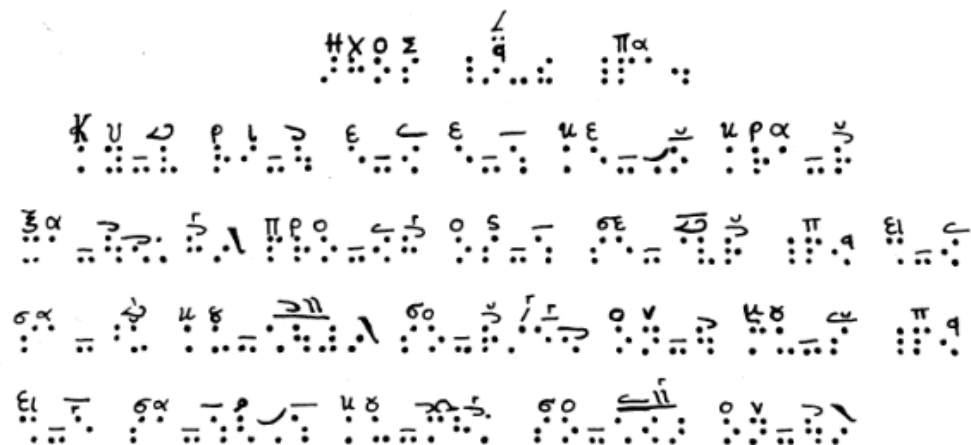


Greek Orthodox chant



Combinations of the above

Δείγμα τοῦ πῶς γράφονται τὰ κείμενα μετὰ μουσικῆς εἰς
BRAILLE. Ἐκ τοῦ Ἀναστασιματαρίου Ἰωάννου τοῦ πρωτοψ.



Greek Orthodox chant in Braille music notation

SCORE for special notations

- Has extensive drawing capabilities
 - Anticipated PostScript in use of splines
- Has a few “palettes” for special characters
 - Chant
 - Mensural notation
 - Tablatures (harp, trumpet, drum, guitar)
 - Large-print notation (for plotter) [no Braille MN]
- Legacy of large-print editions

Maximum user control

- Comes at price of parametric manipulation!