Using Musical Information
1. Classifying Data Domains

**Visual** domain
- scores, parts

**Aural** domain
- performances, recordings

**Logical** domain
- analytical data sets

**Cognitive/perceptual** domain
- how we hear/understand music
2. Granularity of information

Data for **interchange**  
Data for **classification**

A comparison of three view modes:

- Satellite View
- Blend View
- DEM View

Data for **form** analysis  
Data for **feature** analysis

A comparison of different resolution:

- 20km resolution
- 1km resolution
- 50m resolution
3. Information for comparison

Identity #1:
The **atmospheric** nitrogen map of the US
Background=US

Identity #2:
The **ground** nitrogen map of the US
Background=US
3. Information for comparison:

What is in the foreground?

Identity #1:
The *atmospheric* nitrogen map of the US

Background=US

Identity #2:
The *ground* nitrogen map of the US

Background=US
4. Musical features of one note

Many features used only selectively

Violin
4. Musical features of one note

Many features used only selectively

Two features are fundamental:
- Pitch
- Duration

Violin
4. Musical features of one note

Contextual information (notation)

Contextual information (metadata, aural ambience)
5. Musical features by domain

Articulation

Example 1

Dynamics, Gesture
5. Domain conflicts (symbols vs sound)

**Continuous vs static features**

**Articulation:** many sound events prescribed in one symbolic figure

**Dynamics, Gesture:** reduced to symbols in writing but may operate on continuum
6. Data beyond time (*Beyond MIDI #2*)

Time-stealing “durations”

Arpeggios
Grace notes (single, multiple)
Staccatos
7. Gestural data (examples)

Choreography: (L) Labanotation, (M) French dance c.1700, (R) Ballet

Blue Bird, Male Solo
"Sleeping Beauty," Act III

Choreography: after Petipa
Music: Tchaikowsky
Cut bars 47 to 54
Labanotation

• Rudolf Laban (1879-1958), Hungarian
• Aimed to study dance in a “scientific” way through Laban movement analysis
  ◦ Labeling parts of the body
Labanotation

- Rudolf Laban (1879-1958), Hungarian
- Aimed to study dance in a “scientific” way through Laban movement analysis
  - Labeling parts of the body
  - Basic directional signs
  - 27 directional signs (3D)
8. Score organization
Types 1a, 1b *(Beyond MIDI #1)*

**Score-major** systems

**Part-major** systems

**Page-traversal dilemmas**
9. Score organization

Type 2 (*Beyond MIDI* #2)

The “grand staff”

The grand staff as a *single instrument*
10. Sound features not in notation

*Sound decay*

http://www.youtube.com/watch?v=WdGQuITuwiQ

[from Stephen Malinowski’s Music Animation Machine]
11. The GUIDO NoteServer (*ASCII input*)

Developed by Holger Hoos et al at the Fraunhofer Institut, Darmstadt, 2000-04]

Find method for entering: pitch, inflection, octave

http://www.noteserver.org/
Guido input: Pitch and Duration
Feature definition and grouping

Data representation stored

Note duration
Note prolongation
Octave number
Pitch inflection

Pitch (key no.)

"FrereJacques"

[ c0/4 d0/4 e0/4 c0/4 d0/4 e0/4 c0/4 ]

Zoom 50%