

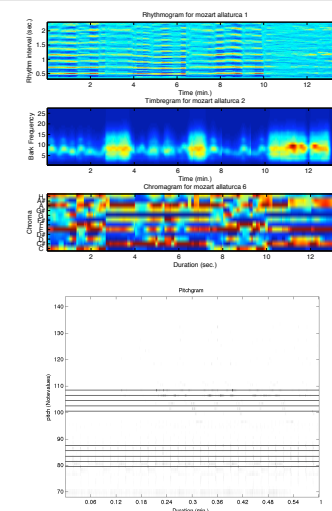
## Musigram – Nu med Noder

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## Content

- Musigram examples
  - Timbregram
  - Chromagram
  - Rhythmogram
- From pitch to notes
  - Pitchgram



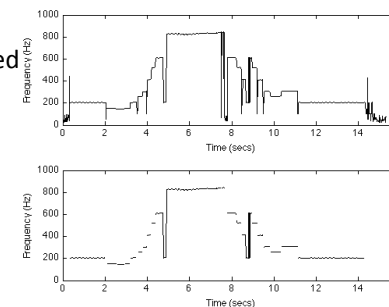
## Pitchgram

- Svært...
  - Grundtone-bestemmelse
  - Polyfonisk ditto
  - Start og slut af tone
  - Respekt for notation-tradition
    - *b* og *#*
  - Meget mere...

## Grundtone-bestemmelse

- Monofonisk eksempel
  - Autokorrelation
  - Med støj fra stilhed
  - Støj fjernet

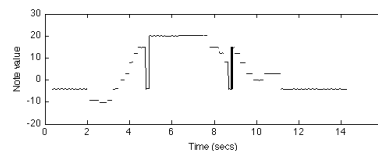
Yehudi Menuhin  
Instruments of the orchestra  
Saxophone example



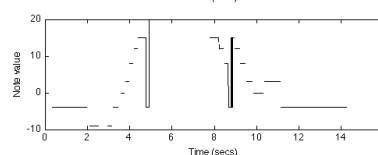
## Omvandling til noder

- $12 \cdot \log_2(\text{frekvens})$

– With vibrato



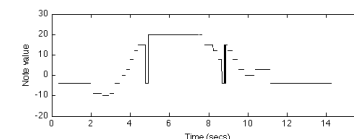
– Rounded



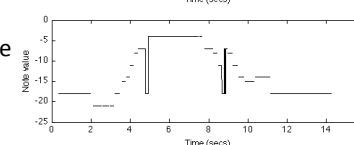
## Fra 12 til 7 noder per oktav

- Hvad med fortegn?
  - # og b
  - C, C#, D, D#, E, F, F#, G, G#, A, A#, B
  - Skalatrin 1,3,6,8,10 er skarpe

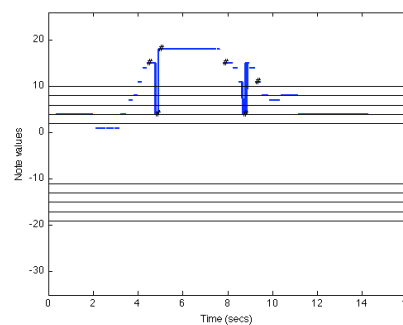
– Før



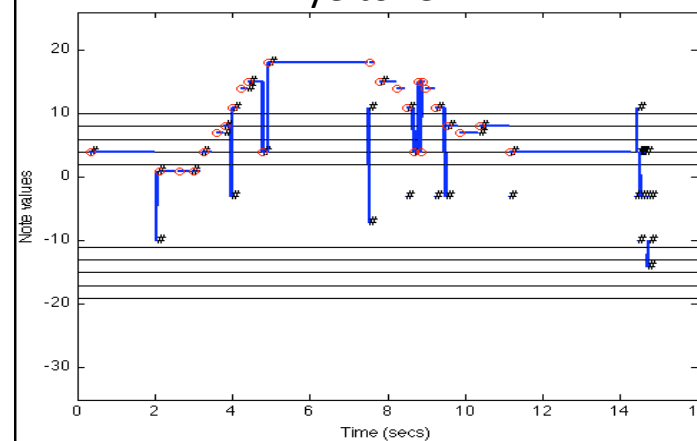
– Efter elimination af skarpe

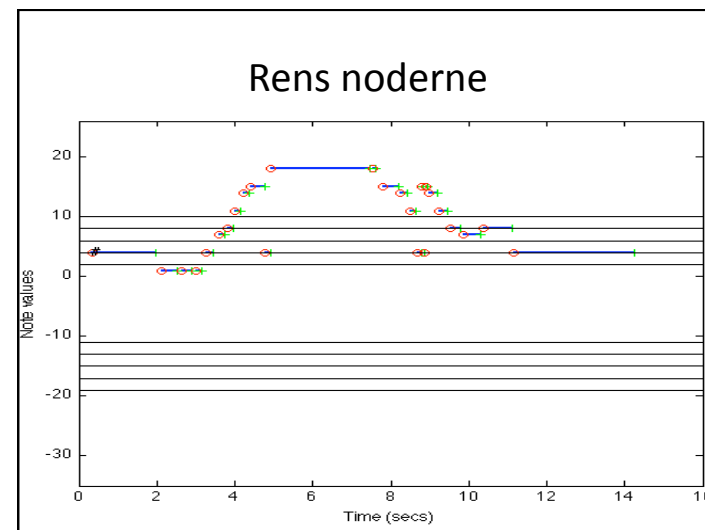
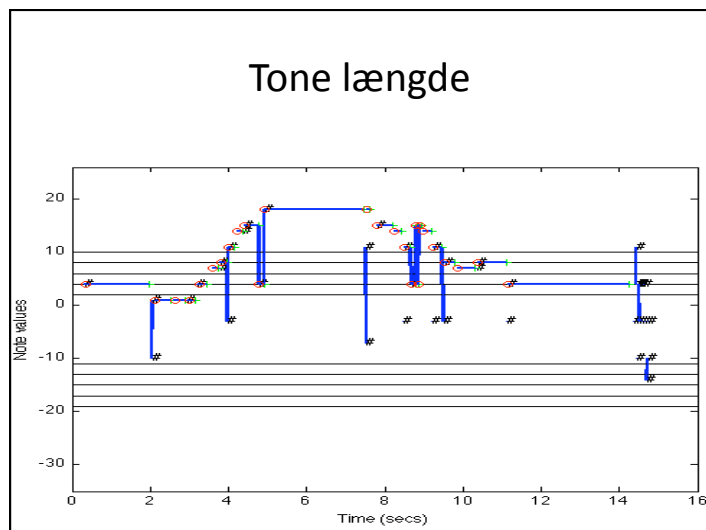


## Med fortegn og hjælpelinjer



## Nye toner





## Konklusion

- Musigram tillader visualisering af vigtige musikalske forandringer
- Er musigram for langt væk fra musik-teoriens klassiske visualiseringsmetoder?
- Pitchgram
  - Rent nodebillede skabt, men mange skridt mangler stadig.