
Stability and Variation in Cadence Formulas in Oral and Semi-Oral Chant Traditions – A Computational Approach

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Reading

Rendition of Torah text determined by:

- Text position (syntax and pronunciation)
- Liturgy (determines melody)
- Local (oral) traditions
- Creativity of the performer

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בְּרֵאשִׁית בָּרָא אֱלֹהִים אֶת הַשָּׁמַיִם וְאֶת הָאָרֶץ:
וְהָאָרֶץ הִיְתָה תֵהוֹ וּבָהוּ וַחֲשָׁךְ עַל־פְּנֵי תְהוֹם וְרוּחַ
אֱלֹהִים מְרַחֶפֶת עַל־פְּנֵי הַמַּיִם:

בְּרֵאשִׁית בָּרָא אֱלֹהִים אֶת הַשָּׁמַיִם וְאֶת הָאָרֶץ
וְהָאָרֶץ הִיְתָה תֵהוֹ וּבָהוּ וַחֲשָׁךְ עַל פְּנֵי תְהוֹם וְרוּחַ
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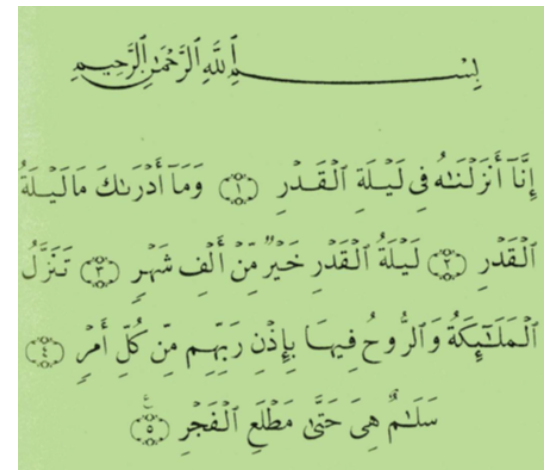
Reading

Rendition of Torah text determined by:

- Text position (syntax and pronunciation)
- Liturgy (determines melody)
- Local (oral) traditions
- Creativity of the performer

Rendition of Qur'an text determined by:

- Rules of Recitation
- Local (oral) traditions
- Creativity of the performer



Aims

Our (long-term) aims are to:

- investigate melodic stability and variability between and within various reading traditions
- test hypotheses about influences from various traditions on Torah Recitation (e.g. Hanoah Avenary (1978): Christian Chant) and Qur'an Recitation (Nelson, Sells)
- better understand the relationship between improvisational and notation-based chant.

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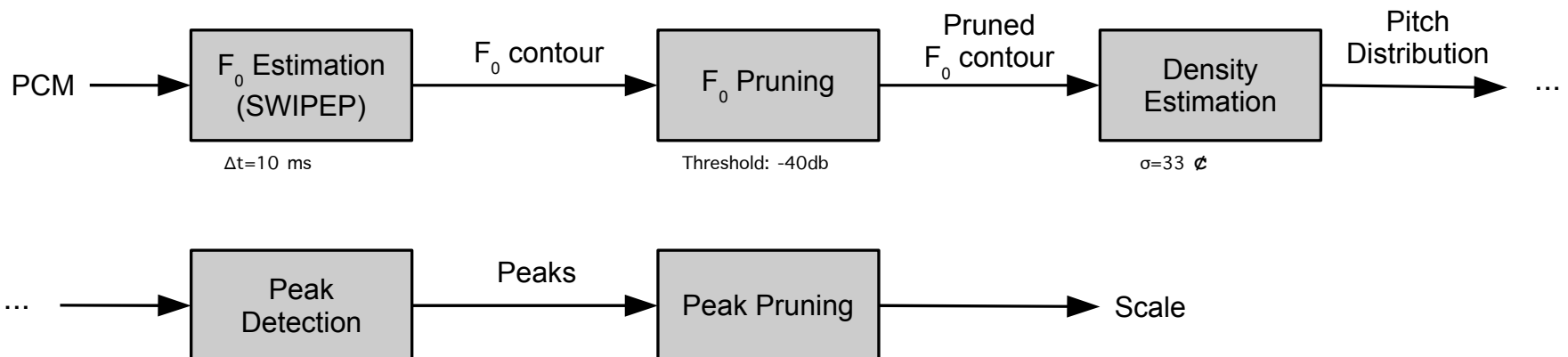
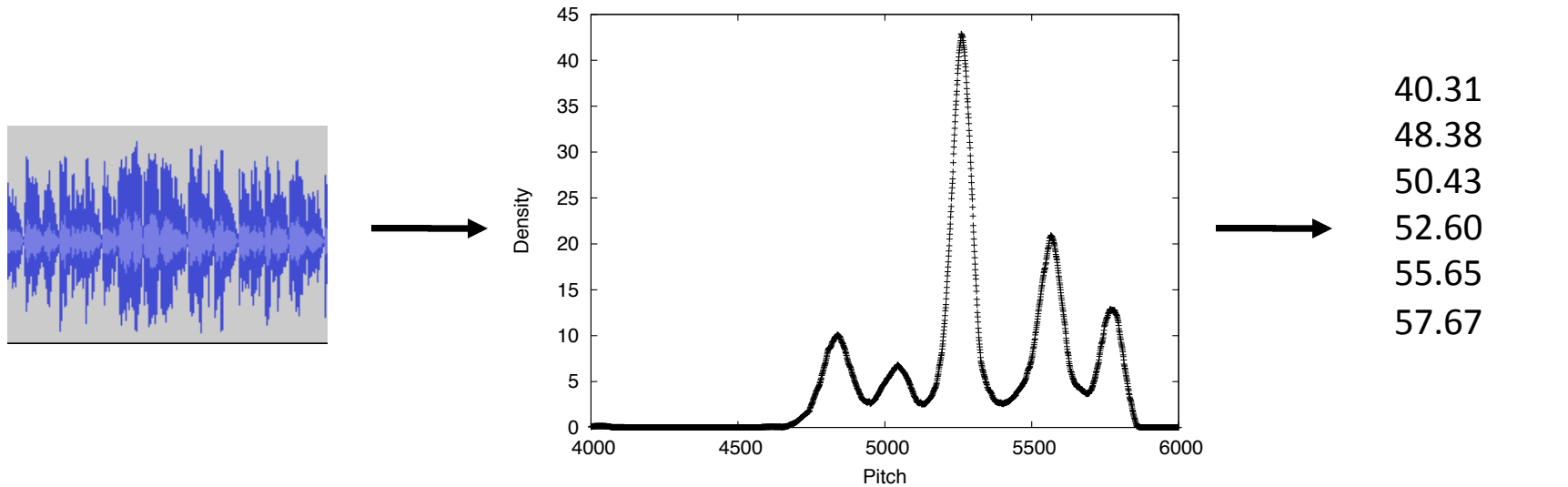
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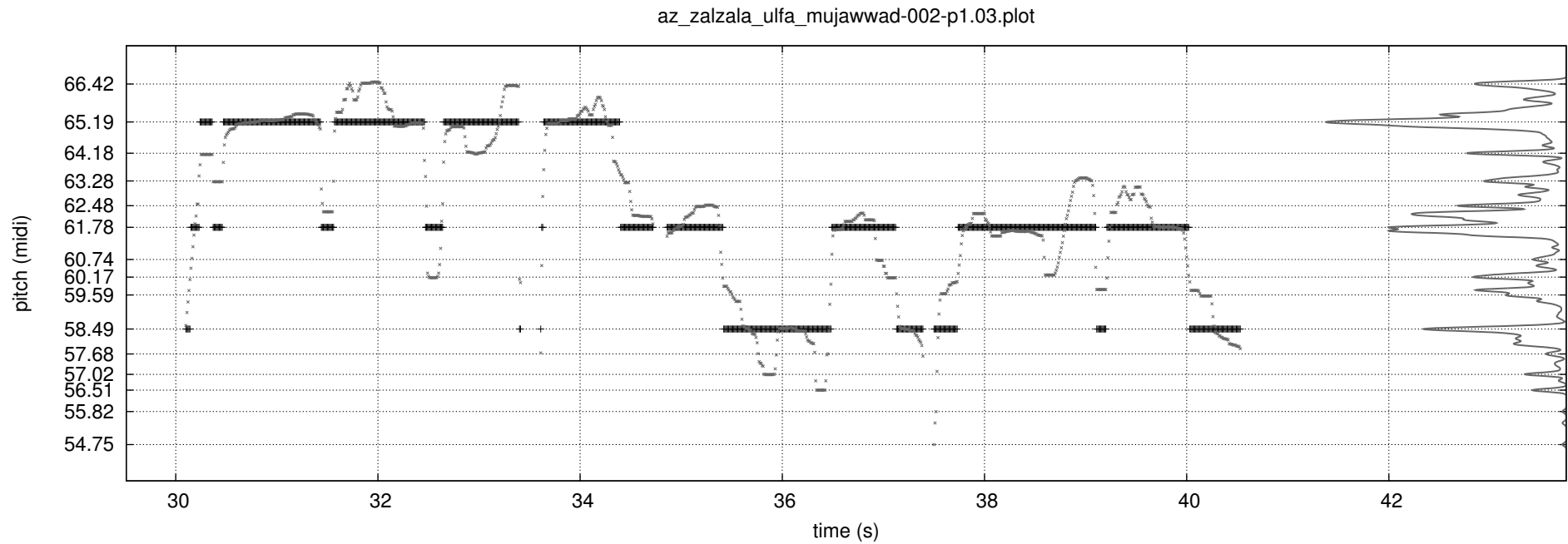
Oral and Semi-Oral Cultures

- Improvised vs. semi-improvised singing
- Culture of remembered song vs. culture of notated song
- Development of notation from oral culture
- Oral and semi-oral cultures and migration/globalization

Scale Deduction from Audio



Scale Deduction from Audio



Current Chant Repertoire

Askenazi reading (Hungary) of *Shir-HaShirim* (Song of songs)

Sephardic reading (Morocco) of *Shir-HaShirim* (Song of songs)

Ashkenazi (German) readings of *Bereshit* (Genesis)

Ashkenazi (Dutch) readings of *Bereshit* (Genesis)

Indonesian readings of Suras *Al-Qadr*, *Az-Zalzala*, *Al-Qari*

Dutch-Indonesian readings of Suras *Al-Qadr*, *Az-Zalzala*, *Al-Qari*

Dutch tune family *Soldaat kwam uit de oorlog*

Computational Ethnomusicology: Transcription

Traditional approach of transcription: listening and manual annotation



Computational Ethnomusicology: We extend possibilities for musical transcription by computational analysis.

(see e.g., G. Tzanetakis, A. Kapur, W.A. Schloss, and M. Wright. "Computational ethnomusicology". *Journal of interdisciplinary music studies*, 1(2):1–24, 2007).

