Annotation of German intonation: DIMA compared with other annotation systems

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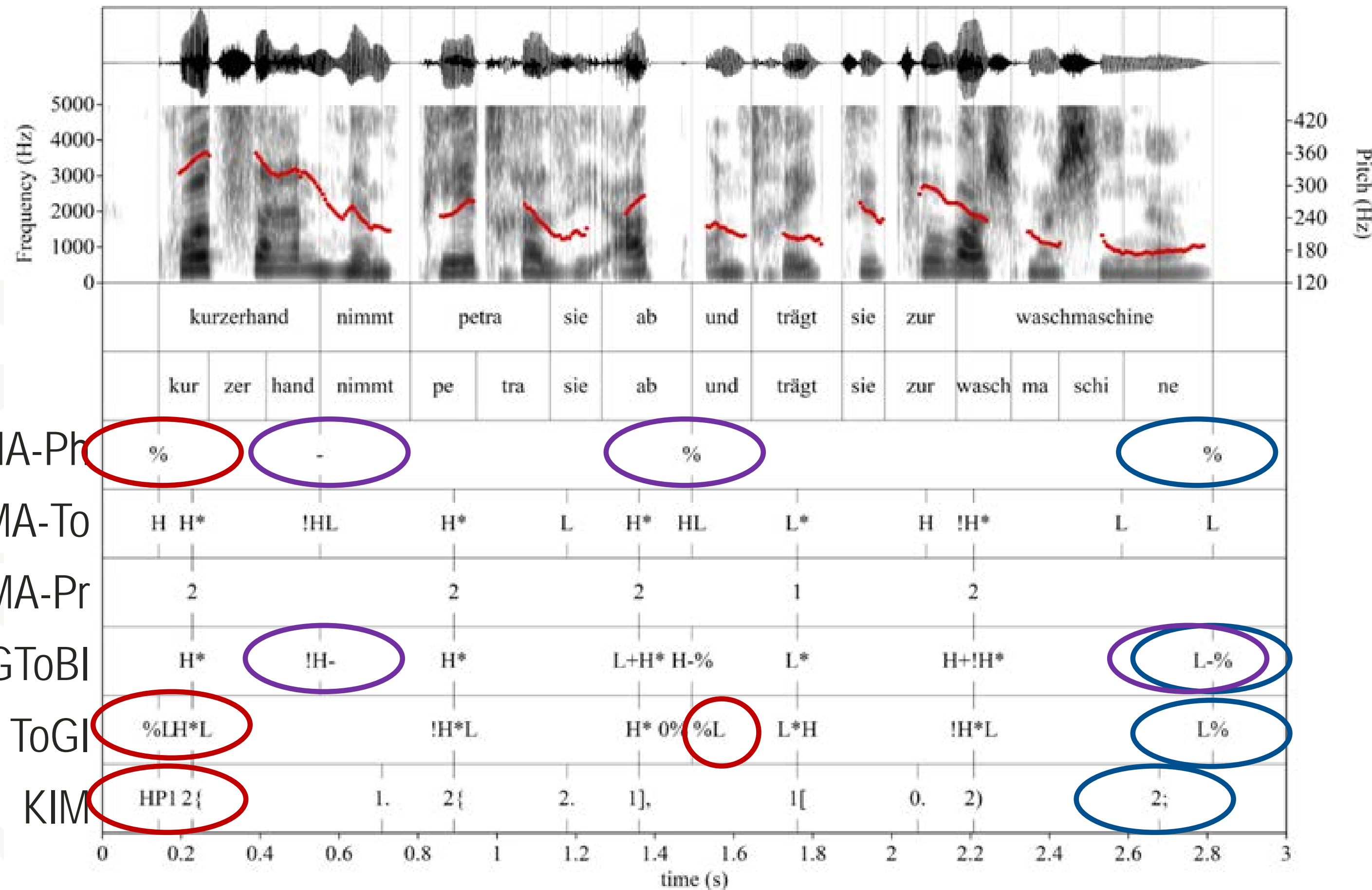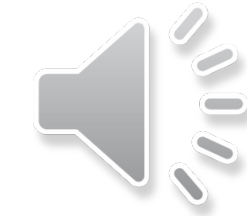
Outline - DIMA in comparison with other systems

- **DIMA** '*Deutsche Intonation – Modellierung und Annotation*'
  - Consensus system for annotating German intonation
  - Perceptually grounded, phonetically informed phonological annotation system (surface-oriented)
  - Annotation process postpones details of phonological analysis (e.g. on-ramp / off-ramp) until later
- **Systems of German intonation – GToBI, GToGI, KIM**
  (Grice, Baumann & Benzmüller 2005; Peters 2018; Kohler 1991, Niebuhr 2019)
- **Other international systems – IViE, RaP, IPrA**
  (Grabe 2004, Grabe & Nolan 2001; Dilley & Brown 2005; Hualde & Prieto 2016)
- Comparison of annotation – phrase boundaries, tonal structure, prominences

DIMA

	Phrase	Tone	Prominence
Core label	% -	H* L* H L	1 2 3
Diacritics	! ^ & ?	! ^ < > ?	?

Criteria:	DIMA	GToBI	ToGI	IViE	KIM	RAP	IPrA
Separ. phrase tier	✓	-	-	-	-	-	-
Phrase levels	2	2	2	1	-	2	3
Initial Bound. To	✓	(✓)	✓	✓	✓	-	(✓)
Final Bound. To	✓	✓	✓	✓	✓	✓	✓
Register changes	✓	-	-	-	✓	-	✓

"Without hesitation, Petra takes them (the curtains) down and carries them to the washing machine."
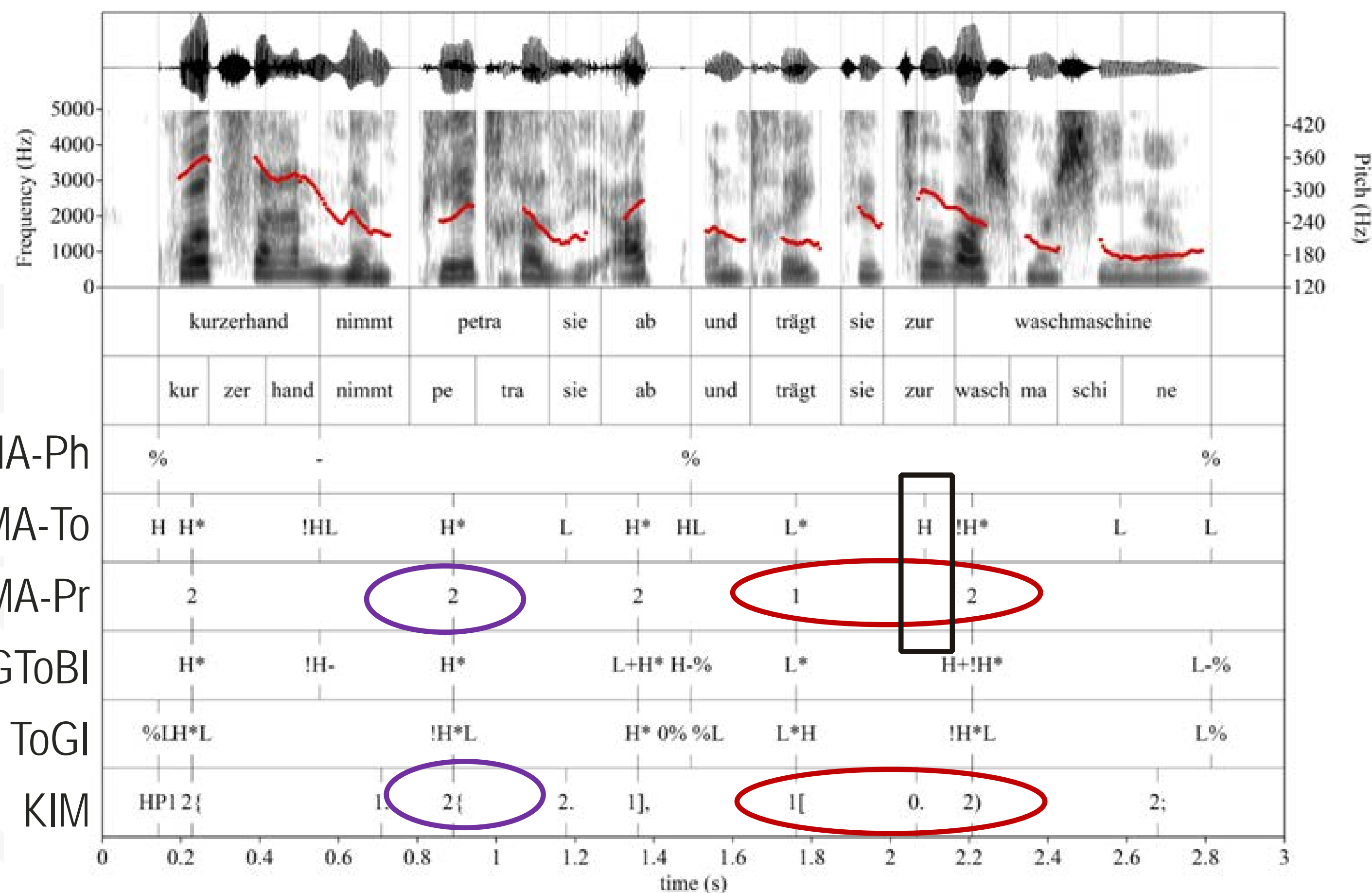
Criteria:	DIMA	GToBI	ToGI	IViE	KIM	RAP	IPrA
Separ. prom. tier	✓	-	-	✓	✓	✓	-
Prom. marking	✓	-	-	✓	✓	✓	-
Levels of prom.	4	-	-	2	4	(4)	-
Prominence independent of tones	✓	-	-	-	✓	(✓)	-
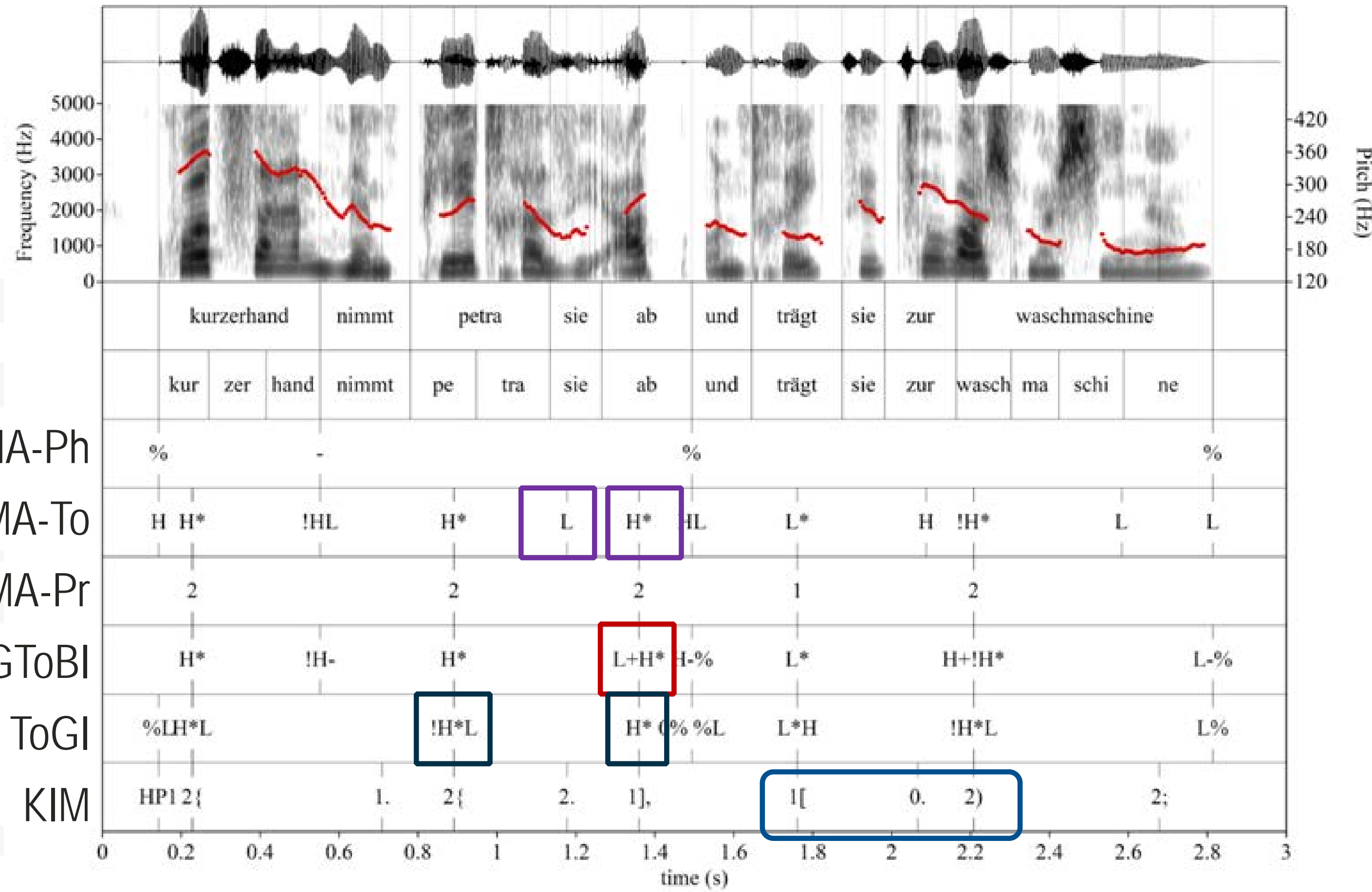
| Criteria:	DIMA	GToBI	ToGI	IViE	KIM	RAP	IPrA
Tone tiers	1	1	1	2	1	1	2
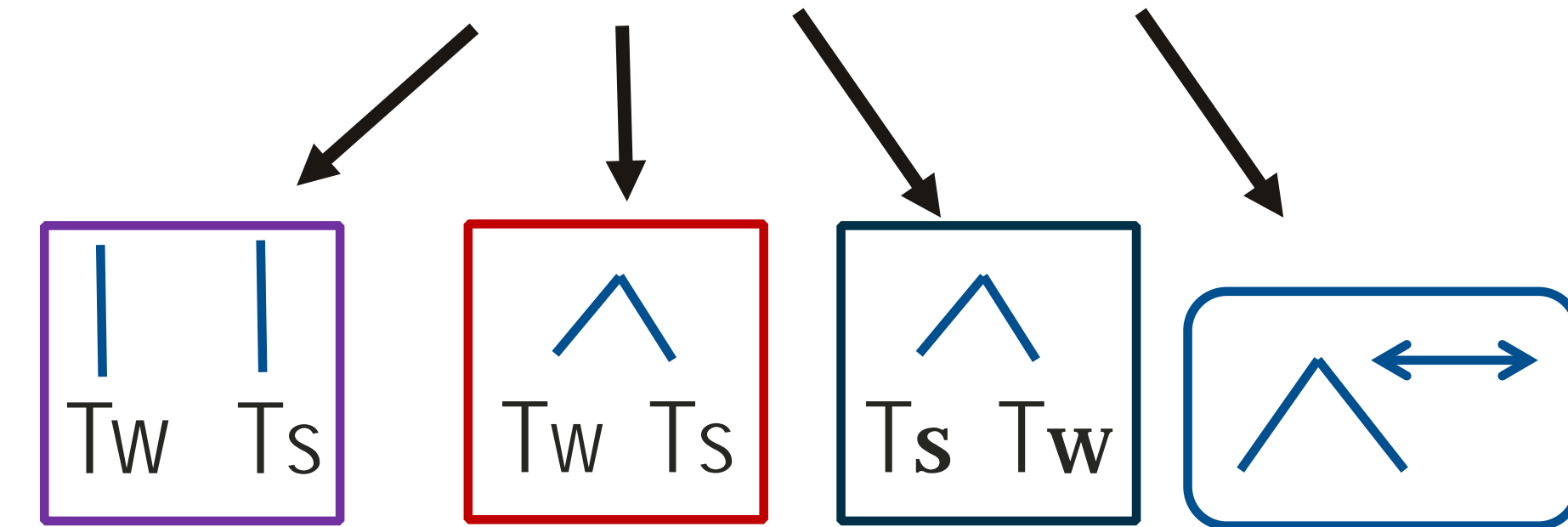
DIMA on the phonetics-phonology scale

- **DIMA annotation decomposes the complex signal on three independent layers.**
- Hence, DIMA provides a phonetically informed phonological annotation of an intonation contour.
  - surface-oriented
  - perception-related
- The systems compared here ascribe different degrees of importance to a phonetic or phonological analysis at the time of annotation.
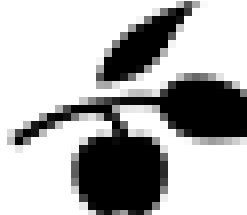
DIMA, IViE, IPrA   KIM   RaP   GToBI, IViE, ToGI

phonetic ⟵――――――――――――――――⟶ phonological

- DIMA categories serve as a basis for translation into different, more explicitly phonological (on-ramp/off-ramp) models of intonation.

Conclusion & Outlook

- Annotation process of DIMA does not require a complete phonological analysis of a language and its intonational grammar.

- With this, DIMA facilitates comparability between different annotation models of German intonation.

- We believe, DIMA may also initiate work on under-described languages and language varieties, as well as on second language and child speech.

➢ **DIMA analysis bridges the gap between the annotation models and serves as a tool to further develop existing models of intonation.**
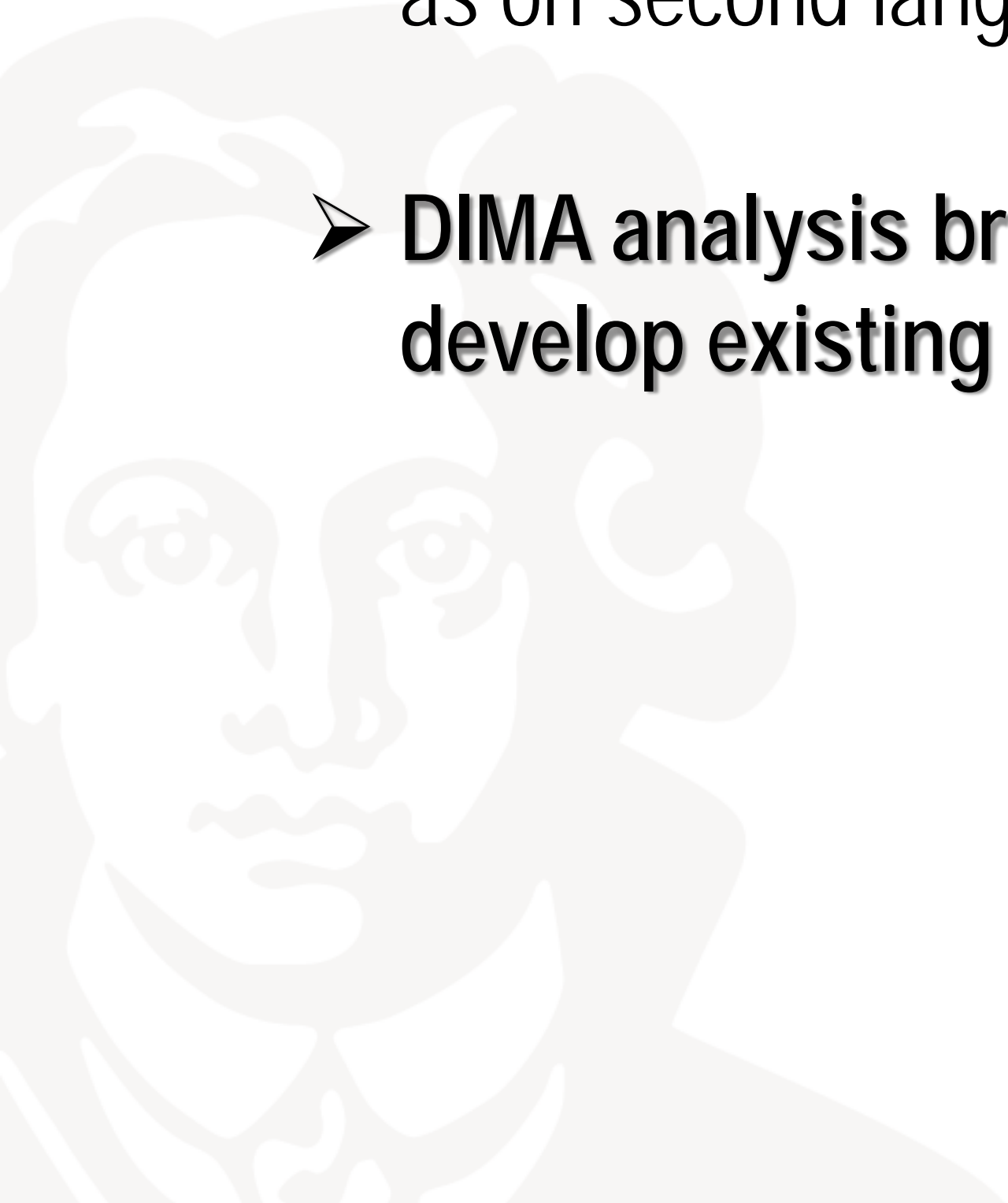
Thank you!

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