

Speech Prosody: Theories, mechanisms, models and tools
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This presentation briefly overviews our latest understanding of prosody in terms of articulatory mechanisms and communicative functions, starting from early findings about lexical tones. From the articulatory perspective, tone production is a process of syllable-synchronized target approximation. Along with this basic process, many other articulatory mechanisms can also be recognized. From the functional perspective, the clear functional nature of tone, namely, to distinguish words and/or grammatical functions, is also relevant for the understanding of intonation, where form-driven approaches are still widespread. The recognition of tone-related articulatory mechanisms also helps to elucidate the mechanisms of encoding intonational functions. The understanding of these articulatory and functional mechanisms has led to the development of the theoretical model of Parallel Encoding and Target Approximation (PENTA) and its computational implementation — the quantitative Target Approximation model (qTA). Recently qTA has been implemented into PENTAtainer — a theory-based yet user-friendly prosody research tool, which is applicable to any language, regardless of whether it is tonal or non-tonal.