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Exploratory research tools for speech perception: TANDEM-STRAIGHT, morphing and new GUI

A speech analysis modification and resynthesis system TANDEM-STRAIGHT enables precise parameter control of synthetic speech while preserving comparable quality with actual human voice. This feature promotes exploratory investigations on relations between speech perception and their physical correlates. Speech morphing algorithms based on STRAIGHT provides means to perform sensitivity analysis of perceptual attributes by introducing perturbation of physical parameters. Recent extension to temporally variable multi-aspect morphing with new GUIs make exploratory research phase efficient. Introduction of these methods from underlying principles to implementation level will be presented with interactive demonstrations.