

Locus equation

-as a phonetic descriptor for place articulation in Arabic.

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Previous studies of American English (e.g. Sussman 1991, 1993, 1994) CVC coarticulation with initial consonants representing the labial, alveolar, and velar showed a linear relationship that fits to data points formed by plotting onsets of F2 transition along the y-axis and their corresponding midvowel points along the x-axis.

The present study extends the locus equation metric to include the following places of articulation: uvular, pharyngeal, laryngeal, and emphatics. The question of interest is to determine if locus equation could serve as phonetic descriptor for the place of articulation in Arabic.

Five male native speakers of Colloquial Egyptian Arabic (CEA) read a list of 204 CVC and CVCC words, containing eight different places of articulation and eight vowels. Average of formant patterns (F1, F2, F3) onsets, midpoints, and offsets were calculated, using wide band spectrograms obtained by means of the Kay spectrograph model (7029), and plotted as locus equations.

A summary of the acoustic properties of the place of articulation of CEA will be presented in the frames of bVC and CVb. Strong linear regression relationships were found for every place of articulation.