

**NAME**

pflux – Compute a variety of measures of dynamism of an F0 contour

**SYNOPSIS**

**pflux** (-d[ebug]) (-t <threshold>) <F0 contour>

**DESCRIPTION**

*pflux* takes as input the fundamental frequency contour of an utterance, in the form of a file of single precision floating point Hertz values, and computes a variety of measures of dynamism. The report is written to the standard output. The values reported are as follows:

**AverageRate (Hz/frame)**

the mean rate of F0 change

**AverageAbsRate (Hz/frame)**

the mean of the absolute values of F0 changes, from point to point in the unmodified F0 contour

**FluctCnt (dimensionless)**

the number of F0 inflections of any magnitude

**FluctMean (Hz)**

the mean magnitude of F0 fluctuations. This differs from AverageAbsRate in that it is computed from the compressed F0 contour and includes only fluctuations greater than the specified threshold.

**FluctVar (Hz)**

the variance of the magnitude of F0 fluctuations

**FluctCnt15 (dimensionless)**

the number of fluctuations of magnitude greater than 15Hz

**FluctCnt10Pct (dimensionless)**

the number of fluctuations greater than 10% of 95% of the range

**FluctCnt20Pct (dimensionless)**

the number of fluctuations greater than 20% of 95% of the range

**FluctCnt30Pct (dimensionless)**

the number of fluctuations greater than 30% of 95% of the range

**FluctCnt40Pct (dimensionless)**

the number of fluctuations greater than 40% of 95% of the range

**FluctCnt50Pct (dimensionless)**

the number of fluctuations greater than 50% of 95% of the range

**FluctCnt60Pct (dimensionless)**

the number of fluctuations greater than 60% of 95% of the range

**FluctCnt70Pct (dimensionless)**

the number of fluctuations greater than 70% of 95% of the range

**FluctCnt80Pct (dimensionless)**

the number of fluctuations greater than 80% of 95% of the range

**FluctCnt90Pct (dimensionless)**

the number of fluctuations greater than 90% of 95% of the range

**FluctCnt100Pct (dimensionless)**

the number of fluctuations greater than 100% of 95% of the range

**Median (Hz)**

the median F0

Following these a number of standard measures are reported for the full range of the data and for the middle 95% of the data. Note that the variances reported here are the variances of the actual F0 values, not the variance of the fluctuations reported above.

If called with the debug option, **pflux** will produce the compressed F0 contour it uses internally (in which plateaux are reduced to a single frame) and the list of fluctuations on the standard output as text.

If called with the threshold setting option, **pflux** will only consider adjacent F0 values to be different when constructing the compressed F0 contour used for locating inflection points if the absolute value of the difference between them exceeds the specified threshold value. The default is 0.0.

**HISTORY**

This program was originally written at Stanford University for the research reported by Rudy Gaudio in his paper "Sounding Gay: Pitch Properties in the Speech of Gay and Straight Men," *American Speech* **69.1.30-57 (1994)**.

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