REPRESENTATION

****synco** — represent degree of metric syncopation

DESCRIPTION

The ****synco** representation encodes numerical values that indicate the degree of metric syncopation for successive moments in a musical passage. Data tokens for ****synco** consist only of decimal numbers. The value 0 indicates no metric syncopation at the current data record. Higher numerical values indicate increasing amounts of metric syncopation at the current data record.

Syncopation values follow a definition of metric syncopation inspired by the work of Lee and Longuet-Higgins (1982). In brief, metric syncopation may be defined as a moment where an expected metric stress is absent. More specifically, a metrically syncopated moment is defined as occurring when no note-onset happens at a moment whose metric position is more important than that of the most recent note onset. For example, where a note occurs on the second beat of a quadruple meter, and is not followed by a note on the third beat, the third beat is deemed syncopated because it occupies a higher metric position than the previous onset.

Numerical ****synco** values are equal to the logarithm of the metric position of the previous onset minus the logarithm of the metric position of the current moment — where the current moment has no note onset, and coincides with a higher metric position than the previous onset. For example, missing downbeats at the beginning of a measure produce the large syncopation values.

Barlines are represented using the "common system" for barlines — see **barlines (2)**.

Note: ****synco** data is normally produced by the **synco** command.

FILE TYPE

It is recommended that files containing predominantly `**synco` data should be given names with the distinguishing '.syn' extension.

SIGNIFIERS

The following table summarizes the ****synco** mappings of signifiers and signifieds.

0-9	decimal values
.	fractional delimiter; null token
=	barline; == double barline

Summary of ****synco** *Signifiers*

EXAMPLES

A sample document is given below:

```
**synco
*M2/4
*tb8
=1
0
0
0
0
=2
1.10
0
0
0
=3
0.69
0
*-
```

PERTINENT COMMANDS

The following Humdrum command produces ****synco** data as output:

synco measure the degree of metric syncopation

TANDEM INTERPRETATIONS

The following tandem interpretations can be used in conjunction with ****synco**:

MIDI channel	`*Ch1`
meter signatures	`*M6/8`
tempo	`*MM96.3`
timebase	`*tb32`

Tandem interpretations for ****synco**

SEE ALSO

barlines (2), ****metpos** (2), **synco** (4), ****timebase** (2)

REFERENCES

Longuet-Higgins, H. C., & Lee, C. S., "The perception of musical rhythms," *Perception,* Vol. 11 (1982) pp. 115-128.