

FOURIER

FOURIER returns the value by means of Fourier transformation based on a dataset of Fourier coefficients

Syntax

1. FOURIER(Pno%, Ndim%, "ColLab\$_1",..., "ColLab\$_Ndim%", Xint_1,...,Xint_Ndim%-1)
2. FOURIER(@ObjFn(..), Ndim%, @ObjColPar_1,..., @ObjColPar_Ndim%, Xint_1,...,Xint_Ndim%-1)
3. FOURIER(Telitab\$, Ndim%, "ColLab\$_1",..., "ColLab\$_Ndim%", Xint_1,...,Xint_Ndim%-1)

Arguments

- **Pno%** is the number that refers to the [TeLiTab](#) sets in the Data slot. Pno% should be an integer value or a parameter which is assigned an integer value and is the number of the [TeLiTab](#) set in the expressions' data slot.
- **@ObjFn()** refers to the Object from which data will be used.
- **TeLiTab\$** refers to the string parameter that contains the [TeLiTab](#).
- **Ndim%** is the number of dimensions (or columns in a table...).
- **"ColLab\$_1"** and **@ObjColPar_1** refer to the column that will be used as the first parameter.
- **"ColLab\$_2"** and **@ObjColPar_2** refer to the column that will be used as the second parameter. etc.
- **Xint** is the parameter used to calculated the value

Remarks

1. See also Telitab access for a generic description on the use of [TeLiTab](#) data
2. Similar to other Data analysis functions, the FOURIER function is a convenient way to interpolate and evaluate data
3. The general format of the Fourier row is:

$$C_0 + \sum_{i=1}^n (A_i \cdot \cos(i \cdot \text{BETA}) + B_i \cdot \sin(i \cdot \text{BETA}))$$

So when you add a dataset, it could for instance have a constant value (C) and two vectors (A and B).

Examples

The function

ALFA = FOURIER(1, 2, "A", "B", BETA)

with in its data slot information on the Fourier coefficients:

```
|FOURIER|
1
"C" 1.18754E+02
2 "A" "B"
"1" -.73236E+02 .14666E+01
"2" -.10800E+01 .27847E+01
"3" -.13450E+01 -.66913E+00
"4" .74183E+01 .16449E+00
"5" .61982E+01 -.28837E+01|
```

The fourier coefficients are read from columns marked respectively with "A" and "B".
Please make sure "A", "B" and "C" are available in the knowledge base.

When you ask ALFA, you have to give BETA. For BETA = 1 the result will be **ALFA = -34.57**.

Quick links: [Functions overview](#) | [Attribute overview](#) | [Constants overview](#) | [Dimensions overview](#)