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## Operator LIRE\_INTE\_SPEC

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### 1 Drank

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Lira on an external file of the complex functions to create an interspectral matrix.

The file user is coded in ASCII.

The functions read are of fonction\_C type.

The product concept is of standard interspectrum.

## 2 Syntax

```
int [interspectrum] = LIRE_INTE_SPEC

(
  ◆ UNITE=/u [I]

  ◇FORMAT=/ "ASTER" [DEFAULT]
  / "IDEAS"
  ◇FORMAT_C=/ "REEL_IMAG" [DEFAULT]
  /"MODULE_PHASE"

  ◇TITER=/titer [TXM]

  ◇NOM_PARA=/ "DX" [TXM]
  / "DY"
  / "DZ"
  / "DRX"
  / "DRY"
  / "DRZ"
  / "TEMP"
  / "INST"
  / "X"
  / "Y"
  / "Z"
  / "EPSI"
  / "FREQ" [DEFAULT]
  / "PULS"
  / "AMOR"
  / "ABSC"

  ◇NOM_RESU=/ nomresu [kN]
  /DSP [DEFAULT]

  ◆PROL_DROITE=/ "CONSTANT"
  / "LINEAIRE"
  / "EXCLUDED"

  ◆PROL_GAUCHE=/ "CONSTANT"
  / "LINEAIRE"
  / "EXCLUDED"

  ◇INTERPOL=/ "NON"
  / "LOG"
  / "LIN" [DEFAULT]

  ◇INFO=/ 1 [DEFAULT]
  /2)
```

## 3 Operands

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### 3.1 Operand UNITE

◆UNITE = U

logical Number from unit from the external file on which the reading is made.

### 3.2 Operand FORMAT

Defines the format of reading:

- "ASTER" by default,
- "IDEAS" if one reads results obtained with IDEAS

### 3.3 Operand FORMAT\_C

Defines the format of reading for functions complexes S:

- "MODULE\_PHASE" by default,
- "REEL\_IMAG" left real and imaginary part.

### 3.4 Operand NOM\_PARA

Defines the name of the parameter of the function (X-coordinate). By default one takes "FREQ".

### 3.5 Operand NOM\_RESU

Defines the name of result of the function (ordered)

### 3.6 Operands PROL\_DROITE / PROL\_GAUCHE

◇PROL\_DROITE =

Defines the prolongation of the function on the right of field of definition of the variable.

◇PROL\_GAUCHE =

Defines the prolongation of the function on the left field of definition of the variable:

- "CONSTANT"
- "LINEAIRE" for a prolongation along the first definite segment (PROL\_GAUCHE) or last definite segment (PROL\_DROITE).
- "EXCLUDED" if the extrapolation of the values apart from the field of definition of the parameter is prohibited.

### 3.7 Operand INTERPOL

◇INTERPOL =

- "LOG" interpolation logarithmic curve between two values of the field of definition.
- "LIN" linear interpolation between two values of the field of definition.

### 3.8 Operand INFO

◇INFO =

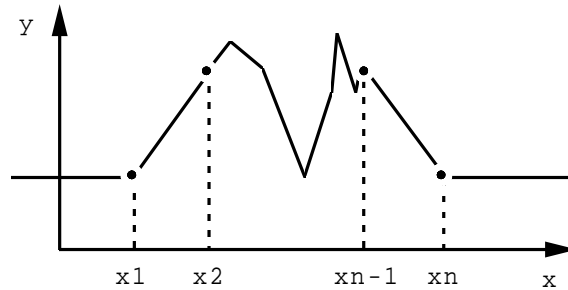
Specifies the options of printing on the message file .

- 1 printing of the attributes of the functions: many points of definition, names of the parameter and result, as well as options of prolongation and checking
-

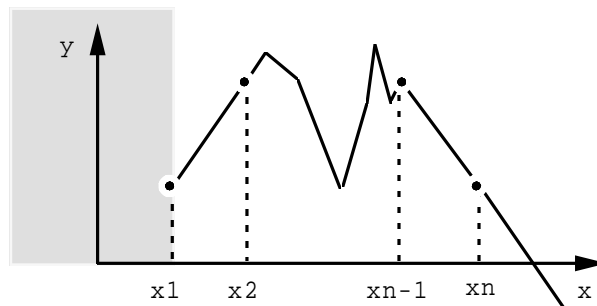
- 2 like 1 plus the list of the first 10 values of each function in the order ascending of the parameter

For example:

- `PROL_DROITE = "CONSTANT"`, `PROL_GAUCHE = "CONSTANT"`



- `PROL_DROITE = "LINEAIRE"`, `PROL_GAUCHE = "EXCLUDED"`



## 4 Phase from checking

Checking amongst values read by functions.

Checking amongst functions read.

## 5 Remarks of use

the functions associated with the interspectral matrix are accessible to the user using command `RECU_FONCTION [U4.32.03]` by means of key word `INTE_SPEC`.

### 5.1 Syntax of the file

the information read on the file is made up of three parts:

- a key word of head of imposed chapter: `INTERSPECTRUM`.
- the key word `DIM`, dimension of the matrix.
- "subfiles defining "complex functions. Each subfile starts with key word `FONCTION_C` and ends in `FINSF`.
- the file ends obligatorily in `FIN`.

*Warning : The translation process used on this website is a "Machine Translation". It may be imprecise and inaccurate in whole or in part and is provided as a convenience.*

## 5.2 Descriptor

### 5.2.1 Key word describing caractérisques matrix

◆DIM = dim

Whole makes it possible to define the dimension of the matrix.

**Note:**

|The sign "=" is compulsory.

### 5.2.2 Key word describing a fonction\_C

**preliminary Remark:**

|*N*, the number of functions to be defined is equal to:  
 $N = (dim * (dim + 1)) / 2$ , since the matrix considered is "HERMITIAN".

N functions are defined by their indices I and J in the matrix. Only the higher triangular part of the matrix is defined, (indices (1,1); (1,2); (2,2); (1,3); ... (N, N)).

◆FONCTION\_C

◆I = whole index line of the function in the matrix.

◆J = whole index column of the function in the matrix.

◆ NB\_POIN = whole number of points of real

FONCTION ◆VALEUR =3\*NB\_POIN must be present. The reading of the values is carried out line with line.

On each line are defined in the following order:

- the value of the parameter, the real part of result, the imaginary part of result (FORMAT = "REEL\_IMAG"),
- or
- the value of the parameter, the modulus of result, the phase of result (FORMAT = "MODULE\_PHASE")

**Note:**

|For the format MODULE\_PHASE, the phase is given in degree.

## 6 Example

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example of syntax of file user:

```
INTERSPECTRUM
DIM = 2
FONCTION_C
I = 1
J = 1
NB_POIN = 4
VALEUR =
           0.          10.          0.1
           10.         10.          0.1
           10.01        0.           0.
           100.         0.           0.
```

```
FINSF
FONCTION_C
I = 1
J = 2
NB_POIN = 4
VALEUR =
           0.          2.           0.5
           10.         2.           0.5
           10.01        0.           0.
           100.         0.           0.
```

```
FINSF
FONCTION_C
I = 2
J = 2
NB_POIN =4
VALEUR =
           0.          20.          0.1
           10.         20.          0.1
           10.01        0.           0.
           100.         0.           0.
```

```
FINSF
FIN
```

Example of syntax of the command:

```
AUTOSPC=LIRE_INTE_SPEC (      UNITE=19,
                              FORMAT=' MODULE_PHASE',
                              PROL_DROITE=' EXCLU',
                              PROL_GAUCHE=' EXCLU',
                              INTERPOL=' LIN'
                              )
```