

## Operator AFFE\_CHAR\_ACOU

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### 1 Drank

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To affect constant acoustic boundary conditions. The affected values do not depend on any parameter and are complex values.

Product a data structure of the `char_acou` type.

## 2 Syntax

```
CH [char_acou] =AFFE_CHAR_ACOU
(
  ◆ MODELE=mo [model]
  ◆ | PRES_IMPO=F ( ◆ | TOUT=' OUI '
                    | NOEUD=lno
[l_noeud]
                    | GROUP_NO=lgno [l_gr_noeud]
                    | MAILLE=lma
[l_maille]
                    | GROUP_MA=lgma
[l_gr_maille]
                    ◆PRES=pre [C]
                )
  | VITE_FACE=_F ( ◆/TOUT=' OUI '
                   /MAILLE =lma
[l_maille]
                   /GROUP_MA =lgma
[l_gr_maille]
                   ◆ VNOR=vn [C]
                )
  | IMPE_FACE=_F ( ◆/TOUT=' OUI '
                   /MAILLE =lma
[l_maille]
                   /GROUP_MA =lgma
[l_gr_maille]
                   ◆IMPE=z [C]
                )
  | LIAISON_UNIF=_F ( ◆/NOEUD=lno
                     / GROUP_NO=lgno [l_gr_noeud]
                     /MAILLE =lma
[l_maille]
                     /GROUP_MA =lgma
[l_gr_maille]
                     ◆DDL=' PRES '
                )
)
```

## 3 Operands

### 3.1 MODEL Operand

◆MODELE =mo

Name of the model whose mesh supports the elements of acoustic computation.

### 3.2 Key keys PRES\_IMPO / VITE\_FACE / IMPE\_FACE

#### 3.2.1 Drank

key Keys factors giving it natural of the conditions imposed on the specified elements (nodes, or nodes groups, meshes or mesh groups).

◆ | PRES\_IMPO

Makes it possible to impose the degree of freedom of pressure.

| VITE\_FACE

Makes it possible to specify the vibratory velocity field imposed in loading on elements of border.

| IMPE\_FACE

Makes it possible to specify the card of impedance imposed in boundary condition on elements of border.

#### 3.2.2 Operands TOUT / NOEUD / GROUP\_NO / MESH / GROUP\_MA

Declaration of the topological entities to which the loadings are applied, boundary conditions.

#### 3.2.3 Operands NEAR / VNOR / IMPE

NEAR = pre

Value (complex) of the acoustic degree of freedom of pressure (only degree of freedom in acoustic modelization) imposed on the specified nodes or nodes groups.

VNOR = vn

Valeur (complex) of the component on the norm **external** with meshes or specified mesh groups, vibratory velocity of the fluid.

IMPE = Z

Value (complex) of the acoustic impedance imposed on meshes or specified mesh groups.

### 3.3 Key word LIAISON\_UNIF

#### 3.3.1 Drank

Key word factor making it possible to impose the same value (unknown) on degrees of freedom of a set of nodes.

#### 3.3.2 Operands NETS / GROUP\_MA / NOEUD / GROUP\_NO

These operands make it possible nodes list to define one  $n$   $N_i$  from which one eliminated the redundancies (for MESH and GROUP\_MA, it is connectivities of meshes).

### 3.3.3 DDL

This operand can be worth in acoustic modelization, only the text "NEAR", defining the only degree of freedom allowed, the acoustic pressure  $p$ .

The resulting imposed conditions are:

$$p(N_1) = p(N_i) \text{ for } i \in \{2, \dots, n\}$$

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## 4 cha

```
Example = AFFE_CHAR_ACOU ( MODELS = Mo,  
                           VITE_FACE = _F ( MESH = m4,  
                                             VNOR = ( "IH" , 0.0135, 0. ) ),  
                           IMPE_FACE = _F ( MESH = m5,  
                                             IMPE = ( "IH" , 442. , 0. ) ) )
```

**Note::**

*The complex values are provided under one of two forms IH (left real, imaginary part) or MP (modulus, phase in degrees).*