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## Tool for interactive postprocessing STANLEY

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### 1 Goal

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Application STANLEY is a tool for interactive postprocessing for calculations *Code\_Aster*. This graphic interface gives access the list of the sizes, to calculate those which are not it yet, to generate the exits for the tools of visualization Gmsh (isovaleurs) and Xmgrace (curves) and of launching those. If the application Salomé is available, Stanley can use it to plot the isovaleurs and the curves.

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## 2 Syntax

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```
STANLEY (
    ◇ RESULT          = result,          [result]
    ◇ MODEL           = model,          [model]
    ◇ CHAM_MATER      = chmater          [cham_mater]
    ◇ CARA_ELEM       = carac           [cara_elem]
    ◇ DISPLAY         = 'IP: N'        [TXM]
    ◇ UNITE_VALIDATION = ul,           [I]
)
```

Note: all the keyword are optional. The natural mode mode of use of Stanley is not to specify a keyword:

```
STANLEY ();
```

Stanley will then propose interactivement to select the result which one wishes post-to treat.

## 3 Operands

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### 3.1 Operand RESULT

◇ RESULT = result

Name of the result post-to treat.

### 3.2 Operand MODEL

◇ MODEL = model

Name of the model.

### 3.3 Operand CHAM\_MATER

◇ CHAM\_MATER = chmater

Name of the field material.

### 3.4 Operand CARA\_ELEM

◇ CARA\_ELEM = carac

Name of the concept cara\_elem.

### 3.5 Operand DISPLAY

◇ DISPLAY = 'IP: N'

This keyword makes it possible to fix or redirect the variable of environment DISPLAY before the opening of the chart window of Stanley. This functionality can be used when the conditions of operations of the waiter of calculation make that the variable DISPLAY is lost during the execution (cluster, distant machines, mode batch, etc...).

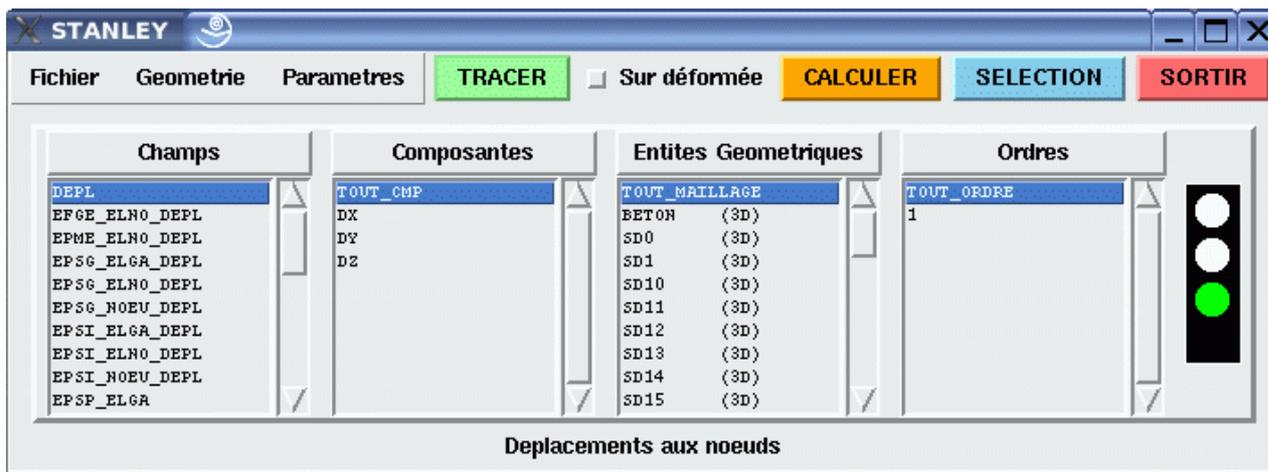
### 3.6 Operand UNITE\_VALIDATION

◇ UNITE\_VALIDATION = ul

This parameter is used only for the developers of Stanley, in order to validate to it not regression of the software.

## 4 Presentation

Application STANLEY is a tool for interactive postprocessing for calculations *Code\_Aster*. This graphic interface gives access the list of the sizes, to calculate those which are not it yet, to generate the exits for the tools of visualization and launching the tools Gmsh (isovaleurs) and Xmgrace (curves), or Salomé (isovaleurs and curves) if this one available on the local machine and is configured on the waiter of calculation Aster.



## 5 Launching of the interface

Stanley is usable by the users of *Code\_Aster*, which is in one of the following situations:

- Work station under Linux/Unix and calculation locally
- Work station under Linux/Unix and calculation on a distant waiter
- Windows work station and calculation on a distant waiter

Stanley must be used in interactive. It is thus advised to carry out its study in the first calculation (which can be launched in Batch mode), at the conclusion which one will save a base post-to treat in interactive mode with Stanley, either on the same machine, or on a different machine. In this last case, it is necessary to use format HDF if the operating systems are different:

```
END (FORMAT_HDF=' OUI ')
```

There exist three ways of launching STANLEY:

- 1) In the interface ASTK, right button on a basis containing an Aster result, then **To open with Stanley**.
- 2) At the end of the command file, to insert the line:

```
STANLEY ()
```

- 3) In the module Aster of Salomé, right button on a basis containing an Aster result.

The configuration of Stanley is done directly in the interface via menus. A file of configuration is generated by the interface and is stored to be re-used.

### First use :

When the file of configuration was not yet creates or is not available, Stanley launches out with options by default. In these cases there, it is necessary necessarily that the variable of environment `DISPLAY`

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that is to say correctly well informed. It is the case when one launches calculation in **interactive by notching the box followed interactive**.

If the interface Stanley still does not appear, the variable DISPLAY can be overloaded in the arguments of the order by indicating address IP of the local machine and the number of the display:

```
STANLEY (DISPLAY=' mon_adresse_ip.der.edf.fr: 0 ')
```

Or:

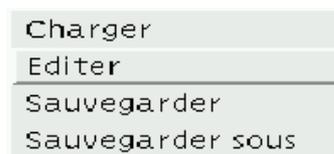
```
STANLEY (DISPLAY=' aaa.bbb.ccc.ddd: 0 ')
```

In light, the argument of the order DISPLAY is the same one as for the Unix order:

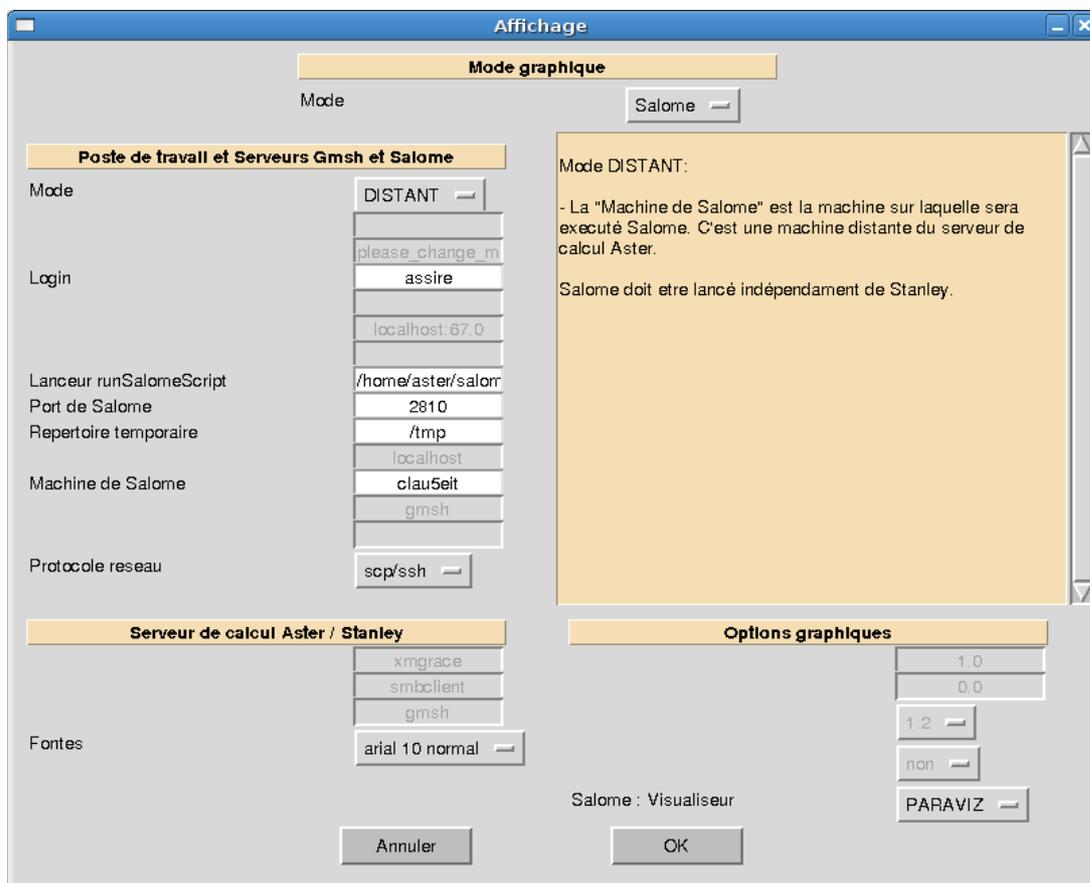
```
DISPLAY=aaa.bbb.ccc.ddd export: N
```

## 6 Parameter setting of the interface Stanley

The parameter setting of Stanley is done directly since the interface. In the menu **Parameters**, to choose **To publish** :

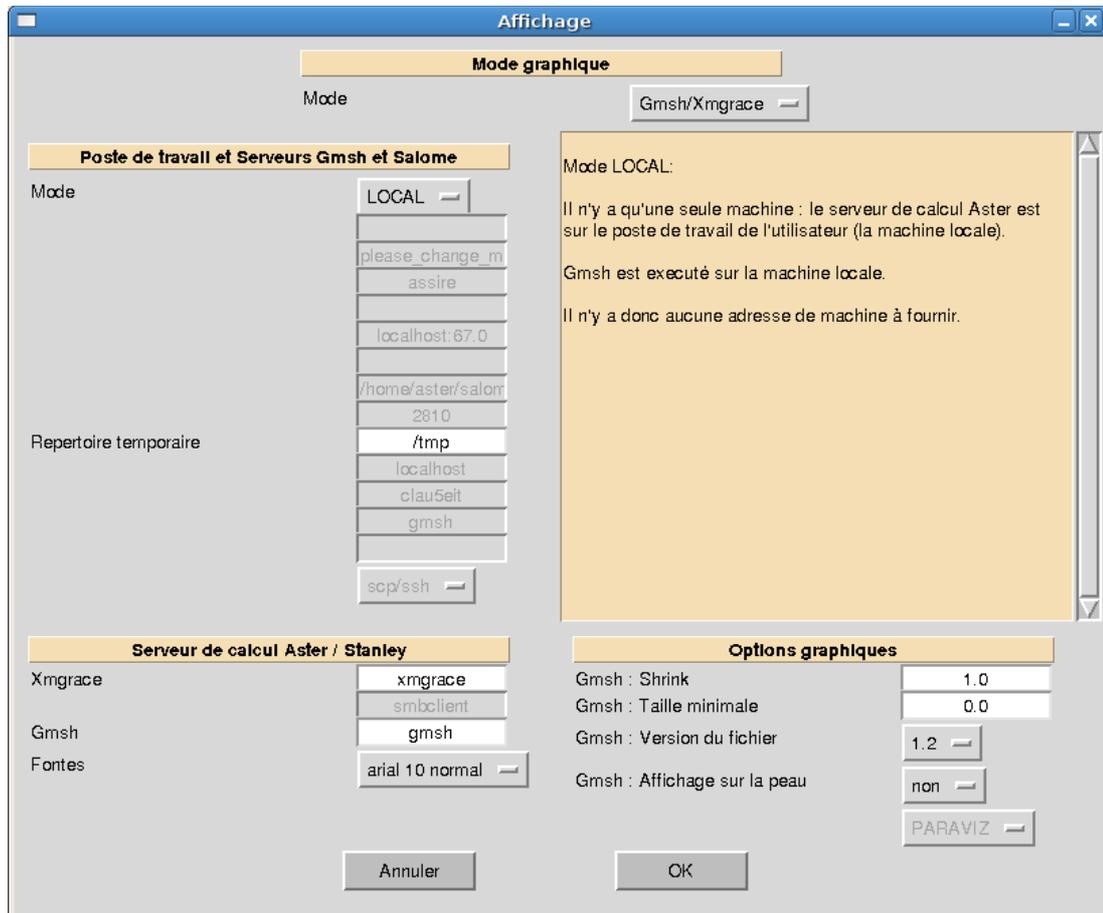


The window which appears contains all the modifiable parameters in Stanley.



The first two parameters make it possible to define the graphic driver used (the couple Gmsh/Xmgrace or Salomé) and the configuration of the work station of the user (calculation Aster on the local machine of the user or a distant machine, user under Windows, etc.).

According to the choices carried out for these the first two parameters, the options are activated or disabled.



The description of all the parameters is carried out below:

- **Graphic mode** : allows to choose the graphic driver used.
  - **MODE** : Gmsh/Xmgrace (by default) or Salomé, if this one is available.
- **Work station and Waiters Gmsh and Salomé** : gather parameters of the station of the user and software Gmsh or Salomé used for visualization.
  - **Mode** : allows to define the work station of the user:
    - **ROOM** : Aster is installed in local version on the machine of the user, this one also being useful for visualization)
    - **DISTANT** : Aster is carried out on a distant machine and Gmsh or Salomé is carried out on the machine of the user (one can also have a diagram with three machine: machine of calculation + Gmsh machine with export of the DISPLAY towards the station of the user).
    - **WINDOWS** : The user is under Windows and *Code\_Aster* is carried out on a distant machine. The files are recopied on shared a Windows repertoire and the user must open manually these files with Gmsh Windows. This mode is not available for Salomé. This mode can be used to copy the Gmsh files from a waiter Samba (file server Windows).

Concerning the detail of the parameters for each mode, one will refer to the paragraph [§7].

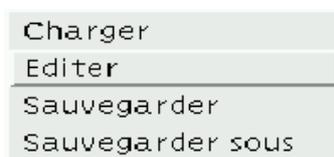
- **Waiter of calculation Aster/Stanley** : gather parameters for the waiter of calculation (machine on which is launched Aster) and the configuration of the IHM of Stanley.
  - **Pig iron and cast iron** : pig iron and cast iron used in the interface. Taking into account with next launching.
  - **Gmsh** : the way towards achievable Gmsh on the waiter of calculation (or 'Gmsh' if it is in the way defined by variable \$PATH). This Gmsh is localised on the waiter of calculation and can be a version batch. It is only used to generate points and lines of postprocessing.
  - **Xmgrace** : the way towards Xmgrace on the waiter of calculation (Xmgrace is obligatorily on the waiter of calculation).
  - **Smbclient** (WINDOWS mode): the way towards the achievable one smbclient on the waiter of calculation (is useful only for one work station under Windows when one uses the repertoire shared Windows).
- **Graphic options** (parameters of Gmsh)
  - **SHRINK** : parameter for CREA\_MALLAGE/CRÉA\_RESU keyword ECLA\_PG.
  - **TAILLE\_MIN** : parameter for CREA\_MALLAGE/CRÉA\_RESU keyword ECLA\_PG.
  - **version\_fichier\_Gmsh** (1. or 1.2): the version of file produced. Version = 1: the QUAD are cut out SORTED some, the HEXA and PENTA in TETRA for postprocessing. Version 1.2 (to be visualized with Gmsh more recent than 1.35): no the cutting of the QUAD, HEXA and PENTA linear.
  - **Posting on the skin** (value YES or NOT): allows to engage the mode SKIN in Gmsh and thus to charge only the skin with the grid.
- **Graphic options** (parameters of Salomé)
  - **Visualisor** : parameter to define the module of visualization which will be used in Salomé (VISU or PARAVIZ).

## 7 Parameter setting of the Work station

The configuration of the work station is done since the interface. Each configuration being saved on the waiter of calculation in a file, one can manage several configurations and rock directly in Stanley of worms the others (for example the Windows work station, a waiter TX in an engine room, etc).

Once a new configuration will have been created by the menu **Parameters / To publish**, this one could be saved in a file on the waiter of calculation Aster (and not the local machine of the user, except if Aster turns on the local machine...).

The user will have to choose **Parameters / To save** (crushes the current file of configuration) or **Parameters / To save under** (created a new file of configuration).



One can thus manage several configurations and pass from the one to the other directly in a session of Stanley, by choosing the menu **Parameters**, then **To charge**.

In the window To publish of Stanley, the relevant parameters are in the part: **Work station and Waiters Gmsh and Salomé** :

For the Graphic Mode Gmsh/Xmgrace:

- **Temporary repertoire** (ROOM, DISTANT): the repertoire where the temporary files Gmsh will be copied.
- **Login** (DISTANT): the login Unix/Linux on the distant machine since which Gmsh will be launched.
- **Machine of visualization** (DISTANT): DISPLAY (in general IP of the station of the user with the number of display 0: ip\_locale: 0).
- **Machine of Gmsh** (DISTANT): address IP of the machine since which Gmsh will be carried out.
- **Gmsh machine: way towards Gmsh** (DISTANT): the way towards the achievable one of Gmsh on the distant machine.
- **Protocol network** (DISTANT): the protocol network for the execution of distant order and the recopy of files (CCP/rsh or SCP/HS).
- **Name of Windows division/Samba** (WINDOWS): the name of the Windows division and possible sub-directories in this division. Example, if the user has a repertoire Windows C:\TEMP shared under the name TEMP and that he wants to deposit his files in C:\TEMP\dir1\dir2, he indicates to Stanley TEMP \ dir1 \ dir2.
- **User name of the division** (WINDOWS): Windows user name having the rights to write in the Windows division. It can be empty if the box "All the users can modify the files of this repertoire" were notched.
- **Password of the division** (WINDOWS): the Windows password associated with the Windows account defined previously.
- **Windows machine/Samba** (WINDOWS): address IP of the Windows machine or the waiter Samba on which one wishes to recopy the Gmsh files.

For the Graphic Mode Salomé:

- **Temporary repertoire** (ROOM, DISTANT): the repertoire where will be copied the temporary files.
- **Wearing of Salomé** (ROOM, DISTANT): port TCP/IP of Salomé. In general, the user will leave the value by default (2810).
- **Machine of Salomé** (DISTANT): address IP of the machine which carries out Salomé.
- **Protocol network** (DISTANT): the protocol network for the execution of distant order and the recopy of files (CCP/rsh or SCP/HS).

Various possible cases					
<b>Work station of the user</b>	Unix 1	Unix 2	Unix 2	Windows	Windows
<b>Waiter of calculation Aster</b>	Unix 1	Unix 1	Unix 1	Unix 1	Unix 1
<b>Waiter of execution of Gmsh</b>	Unix 1	Unix 2	Unix 3	Unix 2	Windows
Corresponding parameter settings to carry out in Stanley					
<b>Mode</b>	ROOM	DISTANT	DISTANT	DISTANT	WINDOWS
<b>Machine of Gmsh</b> address of the machine on which is carried out of Gmsh	IP Unix 1	IP Unix 2	IP Unix 3	IP Unix 2	IP Windows
<b>Machine of Gmsh: way towards Gmsh</b> achievable of Gmsh on the Machine of Gmsh	- Na	Way	Way	- Na	- Na
<b>Login</b> identifying for connection to the Machine of Gmsh	- Na	YES	- Na	YES	YES, if need be
<b>machine_Gmsh_pass</b> password for connection to the Machine of Gmsh	- Na	- Na	- Na	- Na	YES, if need be
<b>Temporary repertoire</b> temporary repertoire on the Machine of Gmsh	YES	YES	YES	YES, this reference mark must be accessible since Windows	YES, to put the name of Windows division
<b>Machine of visualization</b> machine + display where to return the display of Gmsh (the local station)	- Na	Unix2: 0	Unix2: 0	- Na	- Na
Remarks	Any room	Distant calculation, local Gmsh	Terminal X	Windows, need for opening Gmsh with the hand on the file .pos, which is in network	Windows, need for opening Gmsh with the hand on the file .pos

**Table 51 : Various parameter settings according to the type of configuration**

**Explanation:**

- Unix 1: a machine Unix/Linux
- Unix 2: one 2nd machine Unix/Linux

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- Unix 3: one 3rd machine Unix/Linux
- Windows: a machine under Windows

### Some examples of use:

- Configuration 1: All locally.
- Configuration 2: Calculation on distant Waiter + Gmsh locally.
- Configuration 3: Calculation on distant Waiter + distant Gmsh + posting local (for example Final X or Windows with Exceed 3D□).
- Configuration 5: Calculation on distant Waiter + storage of the files `.pos` in a repertoire accessible by network since Windows
- Configuration 4: Calculation on distant Waiter + Gmsh locally under Windows (including Portalis station). Require a repertoire shared under Windows.

### Additional explanations for the Windows users at EDF

For the mode WINDOWS de Stanley, one can put under repertoire of the repertoire of division: in the WINDOWS configuration, for the variable 'temporary Repertoire', it is necessary to add it (or them) under repertoire with a \.

For example "DIVISION \ dir1 \ dir2" means that the name of Windows division is DIVISION and that inside one uses under repertoire dir1 \ dir2.

One can thus use this Windows configuration with any waiters Samba (under Unix or Linux) or Microsoft waiters (for which the name of division led in a repertoire of which the user does not have the rights of writing).

One presents below two examples which function with EDF R & D/AMA, and other EDF units by changing the name of the waiters.

- Example 1: Portalis machine (for EDF) with an access samba to an Unix machine (i.e. a letter of reader assembled automatically towards an Unix account)

Example for EDF/AMA, user 'assire':

```
. waiter Samba Unix: clayrd02.der.edf.fr
. login Unix: assire
. under Samba, the name of division is user name
--> In Stanley, to put:
mode = WINDOWS
Windows machine/Samba      = clayrd02.der.edf.fr
User name of the division   = assire
Password of the division    = mot_de_passe
Name of Windows division/Samba = assire \ tmp
Not to forget to create the /home/assire/tmp repertoire!
```

- Example 2: machine under Microsoft waiter. Example for EDF/AMA:

Example for EDF/AMA, user Portalis 'assire-AIM':

```
. Microsoft waiter: clas0003.cla.edfgdf.fr
. login Microsoft: assire-AIM
. the name of division is in this case: USERS
```

It is necessary to define under repertoire because the home of the user is not directly the shared repertoire, it is: `clas0003.cla.edfgdf.fr \ USERS \ assire-AIM`

Note: it is necessary to be based on the configuration under Windows "to guess" the configuration samba has to use...

--> In Stanley, to put:

```
mode = WINDOWS
Windows machine/Samba      = clas0003.cla.edfgdf.fr
User name of the division  = assire-AIM
Password of the division   = mot_de_passe
Name of Windows division/Samba = USERS \ ASSIRE-AIM \ tmp
```

Not to forget to create the tmp repertoire in its shared repertoire!

Note: in order to determine the configurations which function, it can be useful to simulate with the hand the operation with the order `smbclient` since the waiter Aster:

```
//serveur/nom_de_partage password smbclient - U to use
```

As long as this order does not function, Stanley will not be able to function!

## 8 Use

### 8.1 Use of the IHM

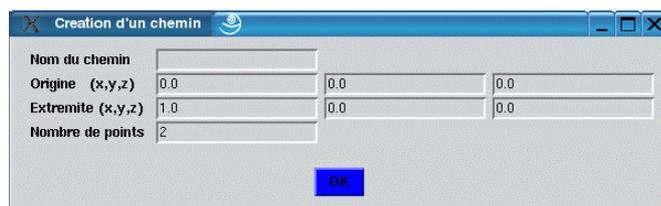
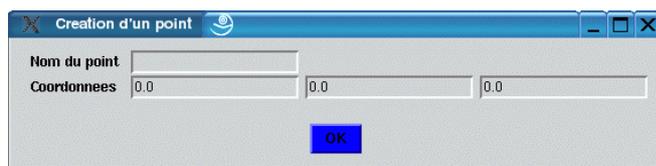
The use itself of the graphic interface does not pose a problem: the term is that of `CALC_CHAMP` and of `IMPR_RESU`.

Concerning ergonomics:

- On the right side, tricolour fire indicates the state of the concepts: green: calculated and displayable, orange concept: concept which one can calculate to pass to green light, red: concept which one cannot calculate within the framework of calculation.
- While clicking on `Order` one rocks between `NUME_ORDRE` and them `INST`.
- While clicking on `Geometrical entities` one rocks between the layout of `isovaleurs` (with `Gmsh`) or of `curves` (with `Xmgrace`).

### 8.2 Addition of points and ways of postprocessing

One can add points and lines which will be used like place for postprocessing, by choosing the menu **Geometry** and **Addition Not** or **Addition Way**.



The geometries added by this intermediary will appear directly in the interface under `Geometrical Entities`. One can thus, for example, to add a point and to look at the temporal evolution of a variable in this point.

### 8.3 Layout on the deformed grid

Since `STANLEY`, one can notch a button to print the field as well as the field of displacements (except for fields `ELGA`).

Once in `Gmsh`, the user can display the field on the deformed grid.

It has three solutions to visualize the field on the deformation in `Gmsh` (v1.60.1):

- Solution 1 (most general):

- To strip the field `XXX_DEPL_VECTEUR`
- To go in Tools/Options then 'View [0]' (or that corresponding to the field to trace)
- Mitre Offset, to click on "Uses general transformation expressions", then to choose Dated Source = 'View [1]' (or that corresponding to the deformed field)
- Solution the 2 (two fields must be compatible, e.g. field `NOEU`) :
  - To strip the field (to leave only the field `XXX_DEPL_VECTEUR`)
  - To go in Tools/Options then 'View [1]' (or that corresponding to the field `XXX_DEPL_VECTEUR`)
  - Mitre Aspect, to choose Dated Source = 'View [0]' (or that corresponding to the field has to visualize)
  - In this same mitre Aspect, to put Vector Display = Displacement
- Solution 3 (walk for the fields `NOEU` and `ELNO`) :
  - To strip the field `XXX_DEPL_VECTEUR`
  - To click on does the box have right field? to visualize then to choose 'Plugins' and 'Displacement Raise'.
  - In the window of the plugin: Is Factor the factor of amplification, `dTimeStep` is the moment used in the field deformed to build the grid deformed (one definite only one deformed grid which will be used for all the steps of time of the field? to visualize).
    - To click on About to have the details concerning this Plugin.

## 8.4 Visualization of the animation of the modes

If calculation Aster is a dynamic calculation, Stanley gives the opportunity of visualizing with Gmsh each mode in the form of an animation. If the user seeks to display field `DEPL` over one moment (or a sequence number), then Stanley will ask to him whether he wants to visualize animation or not.

## 8.5 Use of the validation mode

This functionality is irrelevant for the user and is useful only for the validation of Stanley with each stabilization of the code.

A keyword `UNITE_VALIDATION` allows to specify a logical unit which will define a file in which all the results displayed during the session Stanley will be traced. This functionality is used to check that between two sessions Stanley carried out with two different versions Aster, the layouts are quite identical.

## 9 In the event of problem or to make go up requests

---

Current problems:

- Gmsh does not launch out.

If it `.mess` the error message contains "Can' T open display", check that you notched the interactive follow-up in ASTK well. Check that the files `.rhosts` on the various machines are quite well informed.

- I am in configuration Windows and the file `fort.37.pos` is not deposited in my temporary repertoire Windows.

If the message "putting spins `fort.37.pos` ace \ `fort.37.pos` (xxx kb/s)" appears, it is that Stanley posed the file well. Check that Machine of Gmsh is well the good one and that the shared repertoire is well that in which you look at...

If the preceding message does not appear, check the rights of writing on your repertoire shared while launching one of the two following orders manually (since the waiter of calculation):

```
smbclient '\\ \ my-machine.der.edf.fr \ my-reference mark-temp'  
(repertoire in complete access)  
smbclient '\\ \ my-machine.der.edf.fr \ my-reference mark-temp'  
- U my-log-win (if not)
```

and check that you have the prompt one well "smb: \ >". If it is not the case, check the rights of access on the repertoire shared Windows.

To make go up bugs or requests for evolution of the product, use the AREX *Aster* by opening cards of Anomaly or Evolution Tool.