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## Tool for interactive postprocessing STANLEY

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### 1 Drank

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the application STANLEY is a tool for interactive postprocessing for computations *Code\_Aster*. This graphic interface gives access the list of the quantities, to calculate those which are not it yet, to generate the outputs for the tools of visualization Gmsh (isovaleurs) and Xmgrace (curves) and of launching those. If the Salome application is available, Stanley can use it to trace the isovaleurs and the curved.

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## 2 Syntax

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```
STANLEY (
    ◇RESULTAT=resultat , [result]
    ◇MODELE=modèle , [model]
    ◇CHAM_MATER=chmater [cham_mater]
    ◇ CARA_ELEM=carac
    [cara_elem]
    ◇ DISPLAY= `IP: [TXM]
    ◇ UNITE_VALIDATION=ul , [I]
)
```

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

```
STANLEY ();
```

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

## 3 Operands

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### 3.1 Operand RESULTAT

◇RESULTAT=resultat

Name of result with post-treating.

### 3.2 Operand MODELS

◇MODELE=modèle

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:`

this key word does not make it possible to fix or redirect environment variable DISPLAY before the opening of the chart window of Stanley. This functionality can be used when the conditions of operations of the server of computation make that variable DISPLAY is lost during the execution (cluster, distant machines, mode batch, etc...).

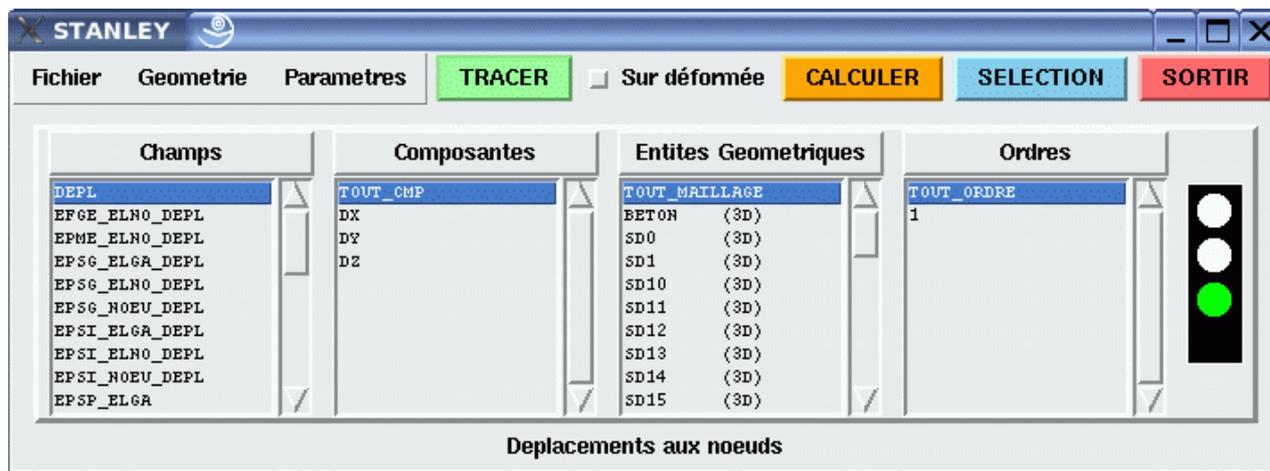
### 3.6 Operand UNITE\_VALIDATION

◇UNITE\_VALIDATION=ul

This parameter is used only for the developers of Stanley, in order to validate non regression software.

## 4 Presentation

the application STANLEY is a tool for interactive postprocessing for computations *Code\_Aster*. This graphic interface gives access the list of the quantities, to calculate those which are not it yet, to generate the outputs for the tools of visualization and launching the tools Gmsh (isovaleurs) and Xmgrace (curves), or Salome (isovaleurs and curves) if this one available on the local machine and is configured on the server of Aster computation.



## 5 Launching of the interface

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

- Work station under Linux/Unix and computation in room
- Work station under Linux/Unix and computation on a distant server
- Windows Work station and computation on a distant server

Stanley must be used in interactive. It is thus advised to carry out its study in the first computation (which can be launched in Batch mode), at the conclusion which one will save a base for post-treating 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:

```
FIN (FORMAT_HDF=' OUI ')
```

There exist three ways of launching STANLEY:

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

```
STANLEY ()
```

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

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 environment variable `DISPLAY` is

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correctly indicated. It is the case when one launches computation in **interactive by notching the box followed interactive**.

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

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

```
: STANLEY (DISPLAY
```

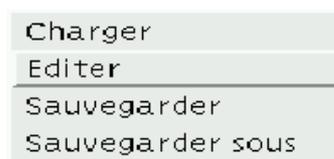
```
= ' aaa.bbb.ccc.ddd: 0 ') In light, argument
```

of the command DISPLAY are the same one as for the Unix command: DISPLAY=aaa.bbb.ccc.ddd export:

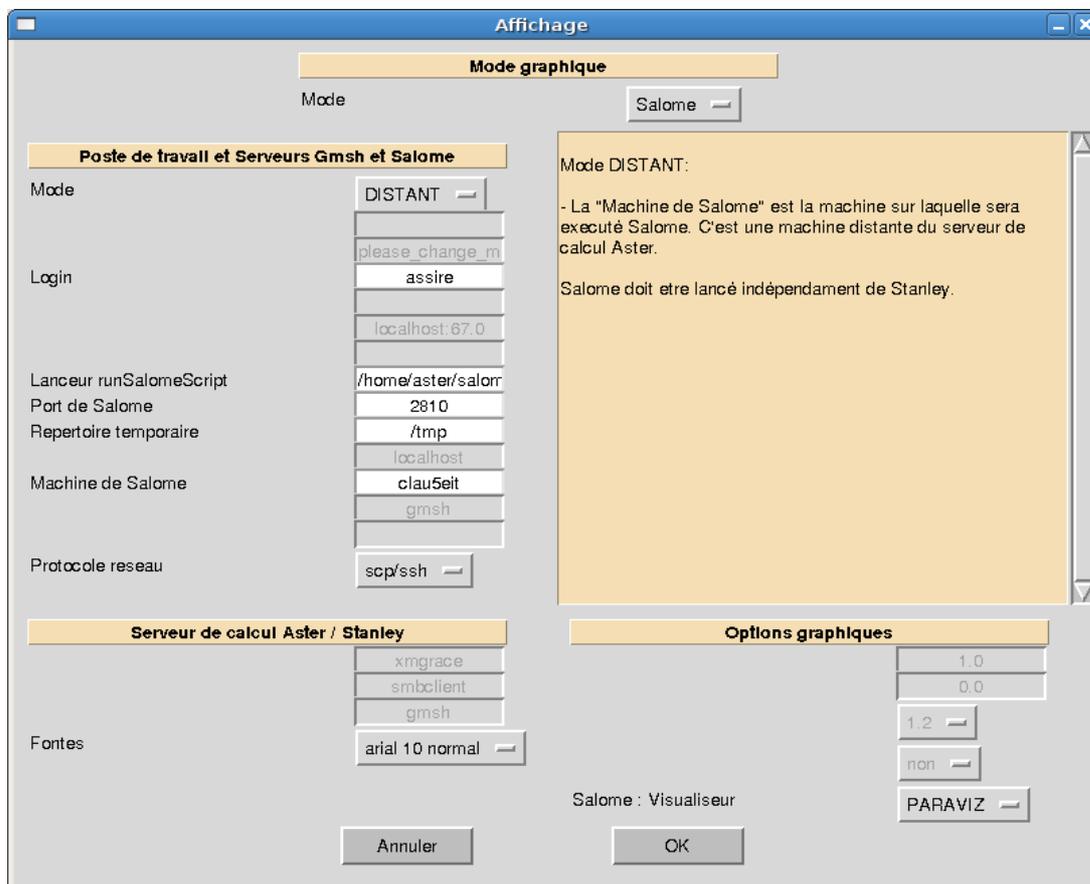
```
N Parameter setting of the interface Stanley
```

## 6 the parameter setting of Stanley is done

directly since the interface. In small the Parameters, to choose To publish: **The window** which appears contains



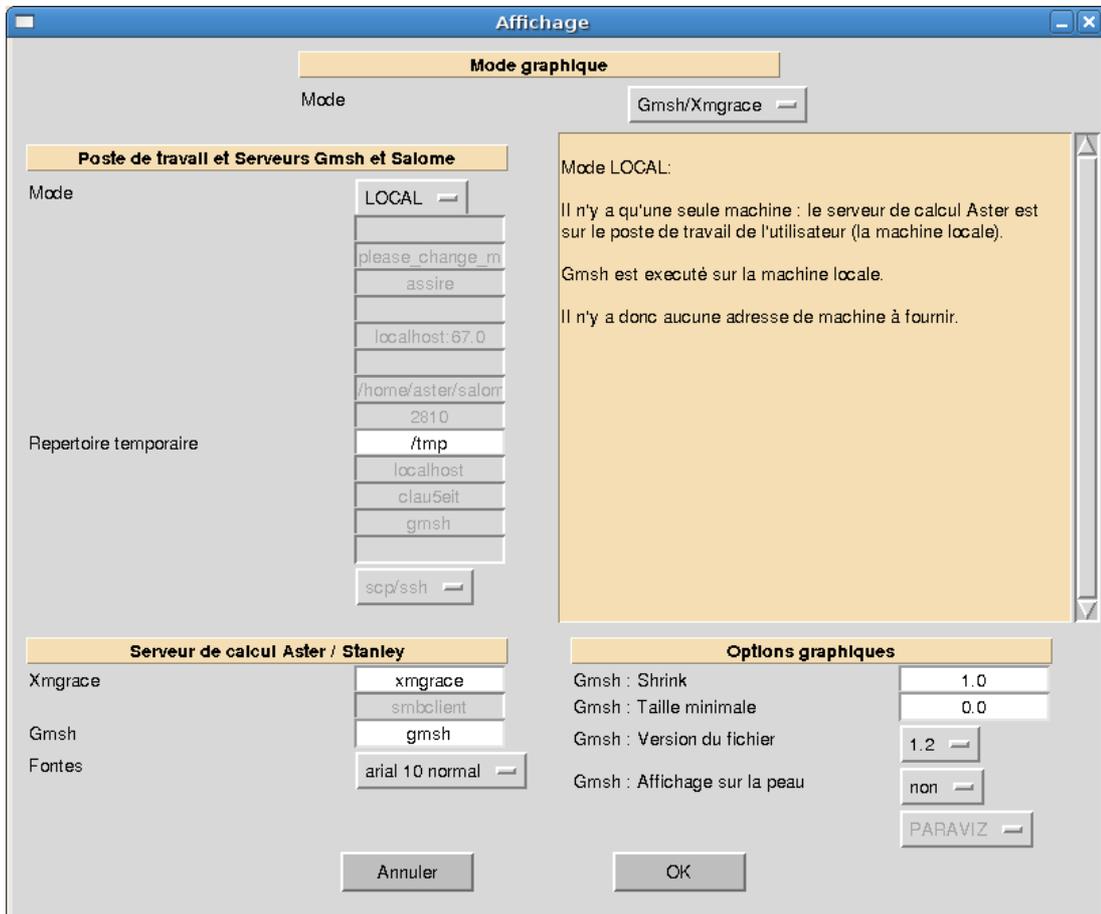
all the modifiable parameters in Stanley. The first two parameters make it possible



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to define the graphic driver used (the couple Gmsh/Xmgrace or Salome) and the configuration of the work station of the user (Aster computation 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** Salome, if this one is available. Work station and Servers Gmsh
- **and Salome: gather parameters of the station** of the user and software Gmsh or Salome used for visualization. Mode: allows to define the work station
  - of the user: LOCAL: 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 Salome is carried out on the machine of the user (one can also have a diagram with three machine: machine of computation + 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 directory and the user must open manually these files with Gmsh Windows. This mode is not available for Salome. This mode can be used to copy the Gmsh files from a server Samba (file server Windows). Concerning the detail of the parameters

for each mode, one will refer to the paragraph [§7]. Server of Aster computation/Stanley7

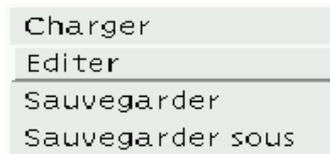
- : **gather parameters for** the server of computation (machine on which is launched Aster) and the configuration of the GUI of Stanley. Cast irons: the cast irons used
  - **in** the interface. Taking into account with next launching. Gmsh: the path towards executable
  - Gmsh on the server of computation (or "Gmsh" if it is in the path defined by variable \$PATH). This Gmsh is localised on the server of computation and can be a version batch. It is only used to generate points and lines of postprocessing. Xmgrace: the path towards Xmgrace
  - **on** the server of computation (Xmgrace is obligatorily on the server of computation). Smbclient (WINDOWS mode): the path
  - **towards** the executable one smbclient on the server of computation (is useful only for one work station under Windows when one uses the directory shared Windows). Graphic options (parameters
- of Gmsh) **SHRINK:** parameter for CREA\_MAILLAGE
  - /CREA\_RESU key word ECLA\_PG. **TAILLE\_MIN:** parameter for CREA\_MAILLAGE
  - /CREA\_RESU key word ECLA\_PG. **version\_fichier\_Gmsh** (1. or 1.2
  - ): **the version of file** produced. Version = 1: the QUADS 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 QUADS, HEXA and PENTA linear. Display on the skin (value
  - **YES or not): allows** to engage mode SKIN in Gmsh and thus to charge only the skin with the mesh. Graphic options (parameters
- of Salome) **Visualiseur :** parameter to define
  - **the modulus** of visualization which will be used in Salome (VISU or PARAVIZ). Parameter setting of the Work station

## 7 the configuration of the work station

is done since L" interfaces. Each configuration being saved on the server of computation in a file, one can manage several configurations and rock directly in Stanley of worms the others (for example the Windows work station, a server TX in an engine room, etc). Once a new configuration

will have been created by small the Parameters/To publish, this one **could be** saved in a file on the server of Aster computation (and not the local machine of the user, except if Aster turns on the local machine...). The user will have to choose

Parameters/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 small the Parameters, then To charge. In **the window** To publish **of Stanley**

, the relevant parameters are in the part: Work station and Servers Gmsh and Salome: For the Graphic Mode Gmsh/Xmgrace

: Temporary directory (LOCAL,

- DISTANT): the directory** 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): the IP address
- of the machine** since which Gmsh will be carried out. Gmsh machine: path towards Gmsh
- (DISTANT): the path towards** the executable one of Gmsh on the distant machine. Protocol network (DISTANT):
- the protocol network** for the execution of distant command and the recopy of files (CCP/rsh or SCP/HS). Name of Windows division/Samba (WINDOWS
- ): **the name of the Windows division** and the possible sub-directories in this division. Example, if the user has a directory Windows C:\TEMP shared under 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 directory" were notched. Password of the division (WINDOWS
- ): **the Windows password** associated with the Windows account defined previously. Windows machine/Samba (WINDOWS)
- : **the IP address of** the Windows machine or the server Samba on whom one wishes to recopy the Gmsh files. For the Graphic Mode Salome

: Temporary directory (LOCAL,

- DISTANT**): the **directory** where will be copied the temporary files. Port of Salome (LOCAL, DISTANT)
- : **port TCP/IP** of Salome. In general, the user will leave the value by default (2810). Machine of Salome (DISTANT):
- the IP address** of the machine which carries out Salome. Protocol network (DISTANT):
- the protocol network** for the execution of distant command and the recopy of files (CCP/rsh or SCP/HS). The various cases possible

Working station from the user					
Unix 1 Unix 2 Unix 2 Windows Windows	Server		of Aster computation		Unix 1
Unix 1 Unix 1 Unix 1 Unix	1 Server	of	execution	of	Gmsh
Unix 1 Unix 2 Unix 3 Unix 2 Windows		the correspondin g		parameter settings	
to carry out in Stanley DISTANT Mode LOCAL DISTANT DISTANT					
<b>WINDOWS</b>		Machine	of Gmsh	address	machine
<b>on which</b> is carried out of Gmsh IP Unix 1 IP Unix 2 IP Unix 3 IP	Unix 2 IP	Windows	Machine of	Gmsh: path	towards executable
<b>Gmsh of Gmsh on the Machine</b> of Gmsh - Na Path Path - Na - Na Login	identifying		for		connection
<b>with</b> the Machine of Gmsh - Na YES - Na YES YES, if need	machine		_Gmsh	_pass	password
<b>for connection</b> with the Machine of Gmsh - Na - Na - Na - Na YES, if temporary	Directory			need	temporary
<b>directory on the Machine</b> for Gmsh YES YES YES YES, this reference mark must be		accessible		since Windows YES, to put the name of division Windows	Machine of visualization machine
<b>+ display where to return</b> the display of Gmsh (the local station) - Na Unix2: 0 Unix2: 0 - Na - Na	Remarks	Very	local	distant	Computation
, Final	local Gmsh	X Windows, need	for opening	Gmsh with the hand on the file .pos, which is in Windows network, need for opening	Gmsh with the hand on the file .pos Table 5-1: Various parameter settings

**according to the type of configuration Explanation: Unix 1: a machine**

## Unix/Linux

- Unix 2: one 2nd machine Unix
- /Linux Unix 3: one 3rd machine Unix

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- /Linux Windows: a machine under Windows
- Some examples of use

## : Configuration 1: All locally

- Configuration 2: Computation on distant
- Server + Gmsh locally. Configuration 3: Computation on distant
- Server + distant Gmsh + local display (for example Final X or Windows with Exceed 3D ).
- Configuration 5: Computation on distant
- Server + storage of the files .pos in a directory accessible by network since Windows
- Configuration 4: Computation on distant
- Server + Gmsh locally under Windows (including Portalis station). Require a directory shared under Windows. Additional explanations for

## the Windows users at EDF For the WINDOWS mode of Stanley

, one can put under directory of the directory of division: in the WINDOWS configuration, for the variable "temporary Directory", it is necessary to add it (or them) under directory with a \. For example "DIVISION \ dir1 \ dir2" means that the name of Windows division is DIVISION and that inside one uses under directory dir1 \ dir2. One can thus use this Windows

configuration with any servers Samba (under Unix or Linux) or Microsoft servers (for whom the name of division led in a directory 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 units EDF by changing the name of the servers.  
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": . server Unix Samba: 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 = clayrd
           02.der.edf.fr User name
           of the division = assire Password
           of the partage= mot_de_passe Name of division
           Windows/Samba= assire \ tmp not to forget
           to create the /home/assire/tmp directory
           ! Example 2: machine under Microsoft server. Example
```

- for EDF/AMA: Example for EDF/AMA, Portalis user "assire

```
- aim": . Microsoft server: clas0003.cla.edfgdf.fr. login Microsoft:
         assire-AIM. the name of division is in this case
         : USERS It is necessary to define
         under directory because the home of the user
         is not directly the shared directory, it is: clas0003.cla.edfgdf.fr \ USERS \ assire-AIM Notes: 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 partage= mot_de_passe Name of division
Windows/Samba= USERS \ ASSIRE-AIM \ tmp
```

not to forget to create the tmp directory in its shared directory ! Note: in order to determine the configurations which function, it can be useful to simulate

with the hand the operation with the command smbclient since the server Aster: //serveur/nom\_de\_partage password smbclient - U to use As long as this command does not function

, Stanley will not be able to function! Use use of the GUI the use itself of the graphic interface

## 8 does not pose

### 8.1 problem: the term

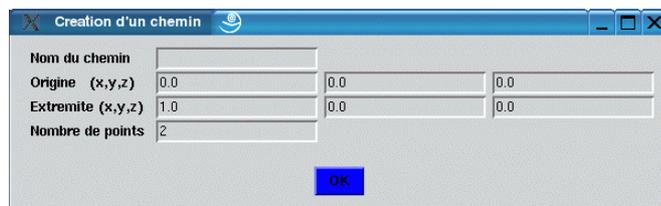
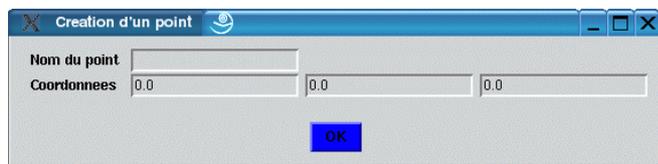
is that of CALC\_CHAMP and IMPR\_RESU. Concerning ergonomics: On the right side, tricolor fire indicates the state of the concepts

: green: calculated and

- displayable, orange concept: concept which one can calculate to pass to green light, red: concept which one cannot calculate in the frame of computation. While clicking on Order one rocks between the NUME\_ORDRE INST and the. While clicking on Geometrical
- Entities one rocks between the layout of isovaleurs (with Gmsh
- ) or curves (with Xmgrace). Addition of points and paths of postprocessing One can add points and lines

### 8.2 which will be used like place for postprocessing

, by choosing small the Geometry and Addition Not or Addition Path. 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. Layout on the mesh deformed Since STANLEY, one can notch a button to print

### 8.3 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 mesh. He has three

solutions to visualize the field on the deformed shape in Gmsh (v1.60.1): Solution

1 (most general): To strip field XXX\_DEPL\_VECTEUR Outward journey in Tools/

•Options then “View [0]” (or that

- corresponding to the field to trace) Mitre
- Offset, to click on “Uses general transformation statements”, then to choose Dated Source
- = “View [1]” (or that corresponding to the deformed field) Solution 2 (the two fields must be compatible, e.g. field NOEU): To strip the field

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- (to leave only field XXX\_DEPL\_VECTEUR) To go in Tools/ Options
  - then "View [1]" (or that corresponding to 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 fields NOEU and ELNO): To strip does field XXX\_DEPL\_VECTEUR
- To click on 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 time used in the field deformed to build the mesh deformed (one definite only one deformed mesh which will be used for all time step field? to visualize). To click on About to have the details concerning this Plugin. Visualization of the animation
    - of the modes If Aster computation is a dynamic computation, Stanley

## 8.4 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 time (or a sequence number), then Stanley will ask to him whether he wants to visualize animation or not. Use of the mode validation This functionality is irrelevant for the user

## 8.5 and is useful only for the validation

of Stanley with each stabilization of the code. A keyword UNITE\_VALIDATION makes it possible 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. In the event of problem or to make go up requests current Problems: Gmsh does not launch out

## 9 . If the .mess contains the error message "Edge

---

"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 indicated. I am in configuration Windows and the file fort.37.pos is not deposited in my temporary

- directory Windows. If the message "putting spins extremely .37.pos ace \ fort.37.pos (xxx kb/s)" appears, it is that Stanley

posed the file well. Check that the Machine of Gmsh is well the good one and that the shared directory is well that in which you look at... If the preceding message does not appear, check the rights of writing on your directory

shared while launching one of the two following commands manually (since the server of computation): smbclient" \\ my-machine.der.edf.fr \ my-reference mark-temp' (directory in complete access) smbclient "\ my-machine.der.edf.fr \ my

reference mark-temp" - U my-log-win (if not) and check that you have prompt "the smb well:

\ >". If it is not the case, check the rights of access on the directory

shared Windows. To make go up bugs or requests for evolution of the product, use the AREX Aster by opening files of Anomaly

or Evolution Tools.