

ZZZZ126 - Validation of the order CREA_CHAMP OPERATION: 'ADZE'

Summary:

This test validates the operation 'ADZE' order CREA_CHAMP who allows to manufacture a field (with the nodes or the elements) by "assembly" of ends of existing fields.

The test consists in affecting on geometrical entities (meshs and nodes), quantities (internal displacements, constraints or variables). One combines then with the operation 'ADZE' order CREA_CHAMP the fields obtained by assignment and one checks that the field result contains the good values.

1 Problem of reference

1.1 Geometry

The geometry of the problem is of no importance. It is enough to know that the grid contains at least:

- 3 named meshes: $M1$, $M2$ and $M3$,
- 3 named nodes: $A1$, $A2$ and $A3$.

1.2 Properties of material

Of no importance. The law of behavior was chosen `VMIS_ISOT_CINE` who has at least 3 internal variables.

1.3 Boundary conditions and loadings

Of no importance.

1.4 Initial conditions

Of no importance

2 Reference solution

2.1 Method of calculating used for the reference solution

That is to say a size G having 3 components X, Y, Z
The grid has 3 geometrical entities (meshes or nodes): $X1, X2, X3$

2 fields first of all are manufactured $ch1$ and $ch2$ by assignment of the size G on the geometrical entities $X1, X2$ and $X3$.

Entity	$X1$			$X2$			$X3$		
	X	Y	Z	X	Y	Z	X	Y	Z
$ch1$	1.		3.	1.		3.	1.		3.
$ch2$		4.	2.		4.	2.		4.	2.

One defines then the fields $ch3$ and $ch4$ by CREA_CHAMP operation ADZE.

One must then obtain:

Entity	$X1$			$X2$			$X3$		
	X	Y	Z	X	Y	Z	X	Y	Z
$ch1$	1.		3.	1.		3.	1.		3.
$ch2$		4.	2.		4.	2.		4.	2.
$ch3$	1.		3.	1.	8.	4.	1.	12.	9.
$ch4$	6.			8.			18.		

To test the various cases of the operation 'ADZE' order CREA_CHAMP, this calculation is done for 5 types of fields:

W	cham_no	displacements
t		
B	cham_elem /ELNO	constraints
C	cham_elem /ELGA	constraints
D	cham_elem /ELNO	internal variables
E	cham_elem /ELGA	internal variables

2.2 Results of reference

For the 5 preceding cases, one tests the lubricated and underlined values below table Ci -:

Entity	$X1$			$X2$			$X3$		
	X	Y	Z	X	Y	Z	X	Y	Z
$ch3$	1.		3.	<u>1.</u>	8.	4.	<u>1.</u>	<u>12.</u>	<u>9.</u>
$ch4$	6.			8.			<u>18.</u>		

2.3 Uncertainties on the solution

No uncertainty.

3 Modeling A

3.1 Characteristics of modeling

Of no importance

3.2 Characteristics of the grid

Of no importance

3.3 Values tested

Identification	Reference
ch3/X2/X	1.0
ch3/X3/X	1.0
ch3/X3/Y	12.0
ch3/X3/Z	9.0
ch4/X3/X	18.0

4 Summary of the results

The results are exactly those expected.