

## Short description of the elementary options of calculations

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### Summary:

One presents here in a few words the various options of elementary calculations of Code\_Aster.

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## 1 Introduction

This table is used above all for the programmers who do not know all the 300 options of the code. It is currently very incomplete. Do not hesitate to share your knowledge and to supplement it.

## 2 A-B

Nom_option	Goal	Phenomenon	Field
ACCEPTANCE	Calculation of elementary normal fluid flow at the points of Gauss, starting from acceleration	mechanics	
ACOU_DDLI_C	Calculation of the elementary terms of Lagrange, in the second member	acoustics	
ACOU_DDLI_F	Calculation of the elementary terms of Lagrange, in the second member (with functions as starter)	acoustics	
ACOU_DDLM_C	Calculation of the elementary terms of Lagrange in the matrix	acoustics	
ADD_SIGM	Addition of constraints at the points of Gauss	mechanics	
AMOR_ACOU	Calculation of the matrix of damping	acoustics	Calculation of matrix
AMOR_AJOU	Calculation of the matrix of damping added starting from normal fluid flows	mechanics	Calculation of matrix
AMOR_MECA	Calculation of the matrix of damping material	mechanics	Calculation of matrix
AMOR_MECA_ABSO	Calculation of the matrix of damping on edges or faces of machine elements	mechanics	Calculation of matrix

## 3 CD

Nom_option	Goal	Phenomenon	Field
CALC_ESTI_ERRE	Calculation of the estimator of error in standard of energy by element, at the points of Gauss	mechanics	Postprocessing
CALC_G	Calculation of the rate of refund of energy	mechanics	Breaking process
CALC_G_F	Calculation of the rate of refund of energy (with functions as starter)	mechanics	Breaking process

CALC_G_GLOB	Calculation of the total rate of refund of energy in 3D on all the face of crack	mechanics	Breaking process
CALC_G_GLOB_F	Calculation of the total rate of refund of energy in 3D on all the face of crack (with functions as starter)	mechanics	Breaking process
CALC_K_G	Calculation of the stress intensity factors in bottom of crack using G	mechanics	Breaking process
CALC_K_G_F	Calculation of the stress intensity factors in bottom of crack using G (with functions as starter)	mechanics	Breaking process
CALC_NOEU_BORD	Calculation of the normal elementary vector at the edge with the nodes (in 2D)		
CARA_CISA	Calculation of the characteristics of transverse shearing of a section 2D of beam	thermics	Postprocessing
CARA_GAUCHI	Calculation of the characteristics of warping of a section 2D of beam	thermics	Postprocessing
CARA_GEOM	Calculation of the geometrical characteristics of a section 2D of beam: inertias	mechanics	
CARA_SECT_POU3R	Calculation for liaison_elem	mechanics	Loadings
CARA_SECT_POUT3	Calculation of the elementary field with 10 components somme/S_élément (DS, X.DS, Y.DS, Z.DS, X*X.DS, Y*Y.DS, Z*Z.DS, X*Y.DS, X*Z.DS, Y*Z.DS) on isoparametric faces of elements 3D (for liaison_elem)	mechanics	Loadings
CARA_SECT_POUT4	Calculation of the 2 vectors defined in the nodes of the elements having for values with the node I element: for the first vector somme/s_élément (NI.DS, 0.0) and for the second vector somme/s_élément (X*NI.DS, Y*NI.DS, Z*NI.DS) on isoparametric faces of elements 3D (for liaison_elem)	mechanics	Loadings

CARA_SECT_POUT5	Calculation of the vector defined in the nodes of the elements having for values with node I of the element somme/s_élément (NI.COS (M.PHI) . P.DS) on isoparametric faces of elements 3D. For liaison_elem of connection 3D_Tuyau and Coque_Tuyau.	mechanics	Loadings
CARA_TORSION	Calculation of the characteristics of torsion of a section 2D of beam	thermics	Postprocessing
CFL_XFEM	Calculation of the conditions CFL ; calculations of elementary fields (delta_phi) necessary to the phases of rebootstraping and reorthogonalisation (method XFEM and propagation)	mechanics	
CHAR_ACOU_VNOR_C	Calculation of the elementary vectors corresponding at the normal speeds imposed on isoparametric faces of elements	acoustics	Loadings
CHAR_DLAG_EVOLST	Calculation of the elementary vectors corresponding under the terms coming from the Lagrangian derivation (method theta) of the first member of the equation in hover	thermics	Loadings; Breaking process
CHAR_DLAG_EVOLTR	Calculation of the elementary vectors corresponding under the terms coming from the Lagrangian derivation (method theta) of the first member of the equation in transient	thermics	Loadings; Breaking process
CHAR_DLAG_FLUN_F	Calculation of the elementary vectors corresponding under the terms coming from the Lagrangian derivation (method theta) of the heat flows (with functions as starter)	thermics	Loadings; Breaking process
CHAR_DLAG_FLUN_R	Calculation of the elementary vectors corresponding under the terms coming from the Lagrangian derivation (method theta) of the heat flows	thermics	Loadings; Breaking process
CHAR_DLAG_MECAST	Calculation of the elementary vectors corresponding under the terms coming from the Lagrangian derivation (method theta) of the first member of the equation	mechanics	Loadings; Breaking process

CHAR_DLAG_PRES_F	Calculation of the elementary vectors corresponding under the terms coming from the Lagrangian derivation (method theta) of the surface loading of pressure (with functions as starter)	mechanics	Loadings; Breaking process
CHAR_DLAG_PRES_R	Calculation of the elementary vectors corresponding under the terms coming from the Lagrangian derivation (method theta) of the surface loading of pressure	mechanics	Loadings; Breaking process
CHAR_DLAG_SOUR_F	Calculation of the elementary vectors corresponding under the terms coming from the Lagrangian derivation (method theta) of the thermal voluminal source (with functions as starter)	thermics	Loadings; Breaking process
CHAR_DLAG_SOUR_R	Calculation of the elementary vectors corresponding under the terms coming from the Lagrangian derivation (method theta) of the thermal voluminal source	thermics	Loadings; Breaking process
CHAR_DLAG_TEXT_F	Calculation of the elementary vectors corresponding under the terms coming from the Lagrangian derivation (method theta) of the outside temperature (with functions as starter)	thermics	Loadings; Breaking process
CHAR_DLAG_TEXT_R	Calculation of the elementary vectors corresponding under the terms coming from the Lagrangian derivation (method theta) of the outside temperature	thermics	Loadings; Breaking process
CHAR_LIMITE	Calculation of the elementary terms for the load limits on incompressible elements	mechanics	Postprocessing; Non-linear calculation
CHAR_LIMITE_F	Calculation of the elementary terms for the load limits on incompressible elements	mechanics	Postprocessing; Non-linear calculation
CHAR_MECA_CONT	Calculation of the second elementary member of contact with the method continues <sub>ECP</sub>	mechanics	Loadings; Non-linear calculation
CHAR_MECA_EPSA_R	Calculation of the second elementary member corresponding to unelastic deformations (keyword: epsa_calculée)	mechanics	Loadings

CHAR_MECA_EPSI_F	Calculation of the second elementary member corresponding to initial deformations (with functions as starter)	mechanics	Loadings
CHAR_MECA_EPSI_R	Calculation of the second elementary member corresponding to initial deformations	mechanics	Loadings
CHAR_MECA_FC1D1D	Calculation of the second elementary member corresponding to linear forces of type complexes (keyword: force_poutre)	mechanics	Loadings
CHAR_MECA_FF1D1D	Calculation of the second elementary member corresponding to linear forces applied to along a beam (with functions as starter)	mechanics	Loadings
CHAR_MECA_FF1D2D	Calculation of the second elementary member corresponding to linear forces applied to an edge of a 2D field (with functions as starter)	mechanics	Loadings
CHAR_MECA_FF1D3D	Calculation of the second elementary member corresponding to linear forces applied to an edge of a field 3D (with functions as starter)	mechanics	Loadings
CHAR_MECA_FF2D2D	Calculation of the second elementary member corresponding to internal forces applied to a 2D field (with functions as starter)	mechanics	Loadings
CHAR_MECA_FF2D3D	Calculation of the second elementary member corresponding to surface forces applied to a face of a field 3D (with functions as starter)	mechanics	Loadings
CHAR_MECA_FF3D3D	Calculation of the second elementary member corresponding to internal forces applied to a field 3D (with functions as starter)	mechanics	Loadings
CHAR_MECA_FF3D3D	Calculation of the second elementary member corresponding to surface forces applied to an element of coque_1D (keyword: force_coque) (with functions as starter)	mechanics	Loadings

CHAR_MECA_FF03D	Calculation of the second elementary member corresponding to surface forces applied to an element of hull (keyword: <code>force_coque</code> ) (with functions as starter)	mechanics	Loadings
CHAR_MECA_FLUX_F	Calculation of the second elementary member corresponding to a flow THM distributed (with functions as starter)	mechanics	Loadings
CHAR_MECA_FLUX_R	Calculation of the second elementary member corresponding to a flow THM distributed	mechanics	Loadings
CHAR_MECA_FORC_F	Calculation of the second elementary member corresponding to nodal forces (with functions as starter)	mechanics	Loadings
CHAR_MECA_FORC_R	Calculation of the second elementary member corresponding to nodal forces	mechanics	Loadings
CHAR_MECA_FR1D1D	Calculation of the second elementary member corresponding to linear forces applied to along a beam	mechanics	Loadings
CHAR_MECA_FR1D2D	Calculation of the second elementary member corresponding to linear forces applied to an edge of a 2D field	mechanics	Loadings
CHAR_MECA_FR1D3D	Calculation of the second elementary member corresponding to linear forces applied to an edge of a field 3D	mechanics	Loadings
CHAR_MECA_FR2D2D	Calculation of the second elementary member corresponding to internal forces applied to a 2D field	mechanics	Loadings
CHAR_MECA_FR2D3D	Calculation of the second elementary member corresponding to surface forces applied to a face of a field 3D	mechanics	Loadings
CHAR_MECA_FR3D3D	Calculation of the second elementary member corresponding to internal forces applied to a field 3D	mechanics	Loadings
CHAR_MECA_FRC02D	Calculation of the second elementary member corresponding to surface forces applied to elements of coque_1D (keyword: <code>force_coque</code> )	mechanics	Loadings



CHAR_MECA_FRCO3D	Calculation of the second elementary member corresponding to surface forces applied to elements of hull (keyword: force_coque)	mechanics	Loadings
CHAR_MECA_FRELEC	Calculation of the second elementary member corresponding to an electric force (keyword FORC_ELEC)	mechanics	Loadings
CHAR_MECA_FRLAPL	Calculation of the second elementary member corresponding to the forces of Laplace (keyword inte_elec)	mechanics	Loadings
CHAR_MECA_FROT	Calculation of the second elementary member of standard friction with the method continuesECP (keyword: contact)	mechanics	Loadings
CHAR_MECA_HYDR_R	Calculation of the second elementary member corresponding to a field of hydration and temperature (keyword: hydr_calculée)	mechanics	Loadings
CHAR_MECA_META_Z	Te0353/358	mechanics	Loadings
CHAR_MECA_ONDE	(KEYWORD: ONDE_FLUI): Calculation of the second elementary member corresponding to a pressure Of SINUSOIDAL INCIDENTAL WAVE ARRIVING NORMALLY AT the FACE	mechanics	Loadings
CHAR_MECA_PESA_R	Calculation of the second elementary member corresponding to gravity	mechanics	Loadings
CHAR_MECA_PRES_F	Calculation of the second elementary member corresponding to a surface pressure (with functions as starter)	mechanics	Loadings
CHAR_MECA_PRES_R	Calculation of the second elementary member corresponding to a surface pressure	mechanics	Loadings
CHAR_MECA_PRSU_F	Calculation of the second elementary member corresponding to a surface force (with functions as starter)	mechanics	Loadings
CHAR_MECA_PRSU_R	Calculation of the second elementary member corresponding to a surface force	mechanics	Loadings

CHAR_MECA_ROTA_R	Calculation of the second elementary member coming from accelerations of swing drive	mechanics	Loadings
CHAR_MECA_SECH_R	Calculation of the second elementary member coming from the deformations due to drying	mechanics	Loadings
CHAR_MECA_SF1D1D	Calculation of the second elementary member for a beam	mechanics	Loadings
CHAR_MECA_SF3D	Calculation of the second elementary member for a hull	mechanics	Loadings
CHAR_MECA_SR1D1D	Calculation of the second elementary member for a beam	mechanics	Loadings
CHAR_MECA_SRC3D	Calculation of the second elementary member for a hull	mechanics	Loadings
CHAR_MECA_TEMP_R	Calculation of the second elementary member coming from the thermal deformations	mechanics	Loadings
CHAR_MECA_VNOR	Calculation of the second elementary member coming a normal speed imposed on an edge of a fluid field in 2D and 3D	mechanics	Loadings
CHAR_MECA_VNOR_F	Calculation of the second elementary member coming a normal speed imposed on an edge of a fluid field in 2D and 3D (with functions as starter)	mechanics	Loadings
CHAR_THER_ACCE_R		thermics	
CHAR_THER_ACCE_X		thermics	
CHAR_THER_ACCE_Y		thermics	
CHAR_THER_ACCE_Z		thermics	
CHAR_THER_EVOL		thermics	
CHAR_THER_EVOLNI		thermics	
CHAR_THER_FLUN_F		thermics	Loadings
CHAR_THER_FLUN_R		thermics	Loadings
CHAR_THER_FLUNL		thermics	Loadings
CHAR_THER_FLUTNL		thermics	Loadings
CHAR_THER_FLUX_F		thermics	Loadings
CHAR_THER_FLUX_R		thermics	Loadings
CHAR_THER_GRAI_F		thermics	
CHAR_THER_GRAI_R		thermics	
CHAR_THER_PARO_F		thermics	
CHAR_THER_PARO_R		thermics	
CHAR_THER_PHID_R		thermics	
CHAR_THER_RAYO_F		thermics	
CHAR_THER_RAYO_R		thermics	

CHAR_THER_SOUR_F		thermics	Loadings
CHAR_THER_SOUR_R		thermics	Loadings
CHAR_THER_TEXT_F		thermics	Loadings
CHAR_THER_TEXT_R		thermics	Loadings
CHAR_THER_TNL		thermics	
COOR_ELGA	Coordinates of the points of Gauss at the points of Gauss		

## 4 OF

Nom_option	Goal	Phenomenon	Field
DEGE_ELNO	Deformations generalized with the nodes in the elements of structure: hulls or beams	mechanics	Postprocessing
DETE_ELNO			
DURT_ELGA	Calculation of hardness at the points of Gauss	mechanics	Postprocessing
DURT_ELNO	Calculation of hardness to the nodes	mechanics	Postprocessing
ECIN_ELEM	Calculation of the elementary kinetic energy	mechanics	Postprocessing
EFGE_ELNO			
ENDO_ELGA			
ENDO_ELNO			
ENEL_ELGA			
ENEL_ELNO			
ENER_ELAS	Calculation of the elementary elastic deformation energy	mechanics	Postprocessing
ENER_TOTALE			
EPME_ELGA			
EPME_ELNO			
EPMG_ELGA			
EPMG_ELNO			
EPOT_ELEM			
EPOT_ELEM_TEMP			
EPSG_ELGA			
EPSG_ELNO			
EPSI_ELGA			
EPSI_ELNO			
EPSP_ELGA	Unelastic deformations by element at the points of Gauss	mechanics	Postprocessing

EPSP_ELNO	Unelastic deformations by element with the nodes	mechanics	Postprocessing
EPMQ_ELGA	Mechanical deformations equivalent to the points of Gauss	mechanics	Postprocessing
EPEQ_ELGA	Deformations equivalent to the points of Gauss (idem preceding)	mechanics	Postprocessing
SIEQ_ELGA	Constraints equivalent to the points of Gauss	mechanics	Postprocessing
EPMQ_ELNO	Mechanical deformations equivalent to the nodes	mechanics	Postprocessing
EPEQ_ELNO	Deformations equivalent to the nodes (idem preceding)	mechanics	Postprocessing
SIEQ_ELNO	Constraints equivalent to the nodes	mechanics	Postprocessing
ERME_ELEM	Estimator of space error in residue by element in mechanics and in HM		
ERTH_ELEM	Estimator of space error in residue by element in thermics		
ERME_ELNO	Estimator of error in residue to the nodes (mechanical)		
ERTH_ELNO	Estimator of error in residue to the nodes (thermal)		
ERRE_QIZZ			
ETOT_ELEM			
ETOT_ELGA			
ETOT_ELNO			
VAEX_ELGA	Extractions of an internal variable at the points of Gauss	mechanics	Postprocessing
VAEX_ELNO	Extractions of an internal variable to the nodes	mechanics	Postprocessing
FLUX_ELGA	Calculation of the heat flux at the points of Gauss	thermics	Postprocessing
FLUX_ELNO	Calculation of the heat flux to the nodes	thermics	Postprocessing
FLUX_FLUI_X			
FLUX_FLUI_Y			
FLUX_FLUI_Z			
FORC_NODA	Calculation of the nodal forces balancing the mechanical constraints	mechanics	Postprocessing
FULL_MECA	Nonlinear mechanical calculation: phase of correction of the method of Newton-Raphson: tangent matrix, second member	mechanics	Non-linear calculation
FULL_MECA_ELAS			

## 5 G-H

Nom_option	Goal	Phenomeno n	Field
GRAD_ELGA_THETA			
GRAD_NEUT9_R			
GRAD_NEUT_R			
GTHE_ELNO_ELGA			

## 6 I-M

Nom_option	Goal	Phenomeno n	Field
IMPE_ABSO			
IMPE_MECA			
INDL_LOCA	Indicator of localization at the points of Gauss		
INDIC_ENER			
INDIC_SEUIL			
INIT_MAIL_VOIS			
INIT_VARC	Option not calculating anything. It is used to dimension the fields of variables of order		
INTE_ELNO	Calculation of the acoustic intensity to the nodes	acoustics	
M_GAMMA	Calculation of the vector nodal inertial forces	mechanics	
MASS_ACOU			
MASS_FLUI_STRU			
MASS_INER			
MASS_MECA	Calculation of the matrix of inertia	mechanics	Calculation of matrix
MASS_MECA_DIAG			
MASS_THER			
MASS_ZZ1			
MECA_BTLA_R			
MECA_BU_R			
MECA_DDLI_C			
MECA_DDLI_F			
MECA_DDLI_R			
MECA_DDLM_R			
META_ELNO			
META_INIT_ELNO			

MOY_NOEU_S			
MTAN_RIGI_MASS			
MTAN_THER_COEF_F			
MTAN_THER_COEF_R			
MTAN_THER_FLUXNL			
MTAN_THER_PARO_F			
MTAN_THER_PARO_R			
MTAN_THER_RAYO_F			
MTAN_THER_RAYO_R			

## 7 N-Q

Nom_option	Goal	Phenomeno n	Field
NSPG_NBVA			
ONDE_FLUI			
ONDE_PLAN			
PAS_COURANT	Calculation of the step of maximum time necessary		
PILO_PRED_DEFO			
PILO_PRED_ELAS			
PRME_ELNO	Calculation of the mechanical pressure to the nodes in decibels		
PRAC_ELNO	Calculation of the acoustic pressure to the nodes in decibels		
QIRE_ELEM			
QIRE_ELNO			

## 8 R- S

Nom_option	Goal	Phenomeno n	Field
RAPH_MECA			
REFE_FORC_NODA	Calculation of the reference of force interns for nonlinear mechanical calculation		
RESI_RIGI_MASS			
RESI_THER_COEF_F			
RESI_THER_COEF_R			
RESI_THER_COEH_F			
RESI_THER_COEH_R			
RESI_THER_FLUXNL			

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.

RESI_THER_PARO_F			
RESI_THER_PARO_R			
RESI_THER_RAYO_F			
RESI_THER_RAYO_R			
RICE_TRACEY		mechanics	
RIGI_ACOU			
RIGI_CONT			
RIGI_FLUI_STRU			
RIGI_FROT		mechanics	Calculation of matrix
RIGI_MECA		mechanics	Calculation of matrix
RIGI_MECA_ELAS		mechanics	
RIGI_MECA_GE		mechanics	
RIGI_MECA_HYST		mechanics	Calculation of matrix
RIGI_MECA_LAGR			
RIGI_MECA_PRSU_F		mechanics	Calculation of matrix
RIGI_MECA_PRSU_R		mechanics	Calculation of matrix
RIGI_MECA_RO		mechanics	Calculation of matrix
RIGI_MECA_SFCO3D		mechanics	
RIGI_MECA_SRCO3D		mechanics	
RIGI_MECA_TANG		mechanics	Calculation of matrix
RIGI_MECA_THMG		mechanics	
RIGI_THER		thermics	Calculation of matrix
RIGI_THER_COEH_F		thermics	Calculation of matrix
RIGI_THER_COEH_R		thermics	Calculation of matrix
RIGI_THER_COET_F		thermics	Calculation of matrix
RIGI_THER_COET_R		thermics	
RIGI_THER_CONV		thermics	
RIGI_THER_CONV_D	REMOVE in V9.0.16	thermics	
RIGI_THER_CONV_T	REMOVE in V9.0.16	thermics	
RIGI_THER_FLUTNL		thermics	
RIGI_THER_PARO_F		thermics	
RIGI_THER_PARO_R		thermics	
RIGI_THER_TRANS		thermics	
SECM_ZZ1			
SIEF_ELGA	State of stress calculated starting from displacements (linear rubber band)	mechanics	Postprocessing
SIEF_ELNO		mechanics	Postprocessing
SIGM_ELNO		mechanics	Postprocessing
SING_ELEM			

SING_ELNO			
SOUR_ELGA	Calculation of a voluminal source of heat starting from an electric potential via the law of Ohm		Loading

## 9 T-Z

Nom_option	Goal	Phenomenon	Field
THER_BTLA_R			
THER_BU_R			
THER_DDLI_F			
THER_DDLI_R			
THER_DDLM_R			
TOPOFA	Calculation of the topology of the facets of contact with X - FEM and the method continues	mechanics	
TOPOSE	Calculation of the topology of the subelements for integration with X - FEM	mechanics	
TOU_INI_ELEM			
TOU_INI_ELGA			
TOU_INI_ELNO			
VARI_ELNO	Calculation of the internal variables to the nodes starting from the value at the points of Gauss	mechanics	Postprocessing
WEIBULL			
XCVBCA			
XFEM_SMPLX_CALC		mechanics	
XFEM_SMPLX_INIT		mechanics	
XREACL			