

附

件

一



E T A B S

Extended Three Dimensional Analysis of Building Systems

Version 6.1

Copyright (C) 1983-1998
COMPUTERS AND STRUCTURES, INC.
All rights reserved

This copy of ETABS is for the exclusive use of

T.T.K.

Unauthorized use is in violation of Federal copyright laws

It is the responsibility of the user to verify all
results produced by this program

18 Oct 2011 21:46:08



EXAMPLE 1 : PLANE FRAME WITH BEAM SPAN LOADS
 STATIC GRAVITY LOAD ANALYSIS UNITS: KIL-METER-SECOND
 J O B C O N T R O L I N F O R M A T I O N

NUMBER OF STORIES-----	1
NUMBER OF FLOOR DIAPHRAGMS ON EACH LEVEL-----	1
NUMBER OF DIFFERENT FRAMES-----	1
NUMBER OF TOTAL FRAMES-----	1
NUMBER OF MASS TYPES-----	0
NUMBER OF LOAD CASES-----	3
NUMBER OF STRUCTURAL PERIODS-----	0
NUMBER OF MATERIAL PROPERTIES-----	2
NUMBER OF PROPERTIES FOR COLUMNS-----	1
NUMBER OF PROPERTIES FOR BEAMS-----	1
NUMBER OF PROPERTIES FOR FLOORS-----	0
NUMBER OF PROPERTIES FOR BRACES-----	0
NUMBER OF PROPERTIES FOR PANELS-----	0
NUMBER OF PROPERTIES FOR SUPPORTS/LINKS-----	0
CODE FOR STATIC LATERAL ANALYSIS-----	0
CODE FOR DYNAMIC LATERAL ANALYSIS-----	0
CODE FOR STRUCTURE TYPE-----	0
CODE FOR P-DELTA ANALYSIS -----	0
CODE FOR FRAME JOINT STIFFNESS MODIFICATION--	0
CODE FOR FRAME SELF WEIGHT LOAD CONDITION----	0
CODE FOR TYPE OF UNITS-----	2
GRAVITATIONAL ACCELERATION-----	0.9800E+01
EIGEN CONVERGENCE TOLERANCE-----	0.1000E-03
EIGEN CUTOFF TIME PERIOD-----	0.0000E+00
P-DELTA FACTOR-----	0.1000E+01

EXAMPLE 1 : PLANE FRAME WITH BEAM SPAN LOADS
 STATIC GRAVITY LOAD ANALYSIS UNITS: KIL-METER-SECOND
 RF 1.29 0



EXAMPLE 1 : PLANE FRAME WITH BEAM SPAN LOADS

STATIC GRAVITY LOAD ANALYSIS UNITS: KIL-METER-SECOND

MATERIAL PROPERTIES

ID	TYPE	ELASTIC MODULUS	POISSONS RATIO	UNIT WEIGHT	UNIT MASS	COEFF OF EXPANSION
1	C	0.2174E+10	0.1500	0.2400E+04	0.2450E+03	0.0000E+00
2	S	0.7000E+10	0.3000	0.7850E+04	0.8010E+03	0.0000E+00

MATERIAL PROPERTIES FOR DESIGN

ID	TYPE	FY	FC	FYS	FCS	FBMAJ	FBMIN
1	C	0.000E+00	0.000E+00	0.000E+00	0.000E+00		
2	S	0.113E+08				0.000E+00	0.000E+00

EXAMPLE 1 : PLANE FRAME WITH BEAM SPAN LOADS

STATIC GRAVITY LOAD ANALYSIS UNITS: KIL-METER-SECOND

SECTION PROPERTIES FOR COLUMNS

SECTION ID	TYPE	MAT ID	MAJOR DIM	MINOR DIM	FLANGE THICK	WEB THICK
1	BOX	2	0.100	0.040	0.003	0.003

SECTION PROPERTY REDUCTION FACTORS FOR COLUMNS

ID	TORSION J	MAJOR I	MINOR I
1	1.000	1.000	1.000

ANALYSIS SECTION PROPERTIES FOR COLUMNS

ID	AXIAL A	MAJOR AV	MINOR AV	TORSION J	MAJOR I	MINOR I
1	0.001	0.001	0.000	0.6079E-06	0.1037E-05	0.2375E-06

EXAMPLE 1 : PLANE FRAME WITH BEAM SPAN LOADS

STATIC GRAVITY LOAD ANALYSIS UNITS: KIL-METER-SECOND

SECTION PROPERTIES FOR BEAMS

SECTION ID	TYPE	MAT ID	DEPTH BELOW	DEPTH ABOVE	BEAM WIDTH	FLANGE THICK	WEB THICK
---------------	------	-----------	----------------	----------------	---------------	-----------------	--------------



1 BOX 2 0.100 0.000 0.040 0.003 0.003
SECTION PROPERTY REDUCTION FACTORS FOR BEAMS

	TORSION	MAJOR	MINOR
ID	J	I	I
1	1.000	1.000	1.000

ANALYSIS SECTION PROPERTIES FOR BEAMS

	AXIAL	MAJOR	MINOR	TORSION	MAJOR	MINOR
ID	A	AV	AV	J	I	I
1	0.001	0.001	0.000	0.6079E-06	0.1037E-05	0.2375E-06

T.T.K.

PAGE 7

PROGRAM:ETABS/FILE:\QQ-00\488\488-E.EKO

EXAMPLE 1 : PLANE FRAME WITH BEAM SPAN LOADS

STATIC GRAVITY LOAD ANALYSIS UNITS: KIL-METER-SECOND

FRAME CONTROL INFORMATION

* MAIN FRAME *

FRAME ID NUMBER-----	1
NUMBER OF COLUMN LINES-----	4
NUMBER OF BEAM BAYS-----	3
NUMBER OF FLOOR BAYS-----	0
NUMBER OF JOINT LOAD PATTERNS-----	2
NUMBER OF BEAM SPAN LOAD PATTERNS-----	1
NUMBER OF FLOOR SURFACE LOAD PATTERNS-----	0
CODE FOR JOINT DATA-----	1
MAXIMUM NUMBER OF BRACE ELEMENTS-----	0
MAXIMUM NUMBER OF PANEL ELEMENTS-----	0
MAXIMUM NUMBER OF LINK ELEMENTS-----	0
MAXIMUM NUMBER OF LOADS PER BEAM SPAN-----	4

COLUMN LINE COORDINATES AND ORIENTATIONS

COLUMN	X-ORD	Y-ORD	ANGLE
1	0.000	0.000	0.00000
2	1.310	0.000	0.00000
3	2.750	0.000	0.00000
4	3.870	0.000	0.00000

BEAM BAY CONNECTIVITY DATA

BAY	I-COLUMN	J-COLUMN	I-END DROP	BAY LENGTH
1	1	2	0	1.310
2	2	3	0	1.440



	3		3		4		0		1.120
--	---	--	---	--	---	--	---	--	-------

JOINT LOADS AND TEMPERATURE CHANGES

ID	F	FX	FY	MX	MY	MZ	T
1	0.000	37.875	0.000	0.0	0.0	0.0	0.000
2	0.000	75.875	0.000	0.0	0.0	0.0	0.000

BEAM SPAN LOADING PATTERNS

ID	NCON	W1/L1	W2/L2	W3/L3	W4/L4
----	------	-------	-------	-------	-------

T.T.K.

PAGE 8

PROGRAM:ETABS/FILE:\QQ-00\488\488-E.EKO

EXAMPLE 1 : PLANE FRAME WITH BEAM SPAN LOADS

STATIC GRAVITY LOAD ANALYSIS UNITS: KIL-METER-SECOND

BEAM SPAN LOADING PATTERNS

ID	NCON	W1/L1	W2/L2	W3/L3	W4/L4
1	0	179.20000	0.00000	0.00000	0.00000
		0.000	0.000	0.000	0.000

INPUT AND/OR GENERATED JOINT DIAPHRAGM CONNECTIVITY

LEVEL	1	2	3	4
-------	---	---	---	---

RF	1	1	1	1
----	---	---	---	---

INPUT AND/OR GENERATED JOINT SUPPORT TYPES

DATA FOR THIS OPTION IS ALL 0

INPUT AND/OR GENERATED COLUMN PROPERTY TYPES

LEVEL	1	2	3	4
-------	---	---	---	---

RF	1	1	1	1
----	---	---	---	---

INPUT AND/OR GENERATED COLUMN PINS (MAJOR/MINOR)

DATA FOR THIS OPTION IS ALL 0

INPUT AND/OR GENERATED BEAM PROPERTY TYPES

LEVEL	1	2	3
-------	---	---	---

RF	1	1	1
----	---	---	---

INPUT AND/OR GENERATED BEAM PINS (MAJOR/MINOR)

LEVEL	1	2	3
-------	---	---	---

RF	3/0	3/0	3/0
----	-----	-----	-----

INPUT AND/OR GENERATED BEAM I-END FLEXIBILITY

DATA FOR THIS OPTION IS ALL 0



EXAMPLE 1 : PLANE FRAME WITH BEAM SPAN LOADS
 STATIC GRAVITY LOAD ANALYSIS UNITS: KIL-METER-SECOND
 INPUT AND/OR GENERATED BEAM J-END FLEXIBILITY
 DATA FOR THIS OPTION IS ALL 0
 INPUT AND/OR GENERATED JOINT LOADS ... LOAD CONDITION I
 DATA FOR THIS OPTION IS ALL 0
 INPUT AND/OR GENERATED JOINT LOADS ... LOAD CONDITION II
 LEVEL 1 2 3 4
 RF 1 2 2 1
 INPUT AND/OR GENERATED JOINT LOADS ... LOAD CONDITION III
 DATA FOR THIS OPTION IS ALL 0
 INPUT AND/OR GENERATED JOINT LOADS ... LOAD CONDITION A
 DATA FOR THIS OPTION IS ALL 0
 INPUT AND/OR GENERATED JOINT LOADS ... LOAD CONDITION B
 DATA FOR THIS OPTION IS ALL 0
 INPUT AND/OR GENERATED JOINT LOADS ... LOAD CONDITION C
 DATA FOR THIS OPTION IS ALL 0
 INPUT AND/OR GENERATED BEAM LOADS ... LOAD CONDITION I
 LEVEL 1 2 3
 RF 1 1 1
 INPUT AND/OR GENERATED BEAM LOADS ... LOAD CONDITION II
 DATA FOR THIS OPTION IS ALL 0

EXAMPLE 1 : PLANE FRAME WITH BEAM SPAN LOADS
 STATIC GRAVITY LOAD ANALYSIS UNITS: KIL-METER-SECOND
 INPUT AND/OR GENERATED BEAM LOADS ... LOAD CONDITION III
 DATA FOR THIS OPTION IS ALL 0
 SUMMATION OF FRAME LOADING (VERTICAL DOWNWARDS)
 LEVEL /-----LOAD CONDITIONS-----/
 ID I II III A B C
 RF 693.50 0.00 0.00 0.00 0.00 0.00 0.00
 BASELINE 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 TOTALS 0.694E+03 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
 SUMMATION OF FRAME LOADING (LATERAL-X)



LEVEL	/-----LOAD CONDITIONS-----/					
ID	I	II	III	A	B	C
RF	0.00	227.50	0.00	0.00	0.00	0.00
BASELINE	0.00	0.00	0.00	0.00	0.00	0.00
TOTALS	0.000E+00	0.228E+03	0.000E+00	0.000E+00	0.000E+00	0.000E+00

SUMMATION OF FRAME LOADING (LATERAL-Y)

LEVEL	/-----LOAD CONDITIONS-----/					
ID	I	II	III	A	B	C
RF	0.00	0.00	0.00	0.00	0.00	0.00
BASELINE	0.00	0.00	0.00	0.00	0.00	0.00
TOTALS	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

SUMMATION OF FRAME ELEMENT WEIGHTS

LEVEL	/-----ELEMENT TYPE-----/				
ID	COLUMN	BEAM	BRACE	PANEL	FLOOR
RF	17.317	23.962	0.000	0.000	0.000
BASELINE	17.317	0.000	0.000	0.000	0.000
TOTALS	0.346E+02	0.240E+02	0.000E+00	0.000E+00	0.000E+00

SUMMATION OF FRAME ELEMENT MASSES

LEVEL	/-----ELEMENT TYPE-----/				
ID	COLUMN	BEAM	BRACE	PANEL	FLOOR
RF	1.767	2.445	0.000	0.000	0.000
BASELINE	1.767	0.000	0.000	0.000	0.000
TOTALS	0.353E+01	0.245E+01	0.000E+00	0.000E+00	0.000E+00

T.T.K.

PAGE 11

PROGRAM:ETABS/FILE:\QQ-00\488\488-E.EKO

EXAMPLE 1 : PLANE FRAME WITH BEAM SPAN LOADS

STATIC GRAVITY LOAD ANALYSIS UNITS: KIL-METER-SECOND

FRAME POSITION DATA

FRAME FRAME /----FRAME ORIENTATION----/ /-----FRAME HEADING-----/

COUNT	ID	X-ORD	Y-ORD	ANGLE	
1	1	0.00	0.00	0.000	<< MAIN FRAME >>



T.T.K.

PAGE 12

PROGRAM:ETABS/FILE:\QQ-00\488\488-E.EKO

EXAMPLE 1 : PLANE FRAME WITH BEAM SPAN LOADS

STATIC GRAVITY LOAD ANALYSIS UNITS: KIL-METER-SECOND

DIAPHRAGM MASS DATA

RESULTANTS OF STORY & TRIBUTARY ELEMENT MASSES

STORY LEVEL RF	DIAPHRAGM NUMBER	DIAPHRAGM MASS	DIAPHRAGM MMI	DIAPHRAGM X-M	DIAPHRAGM Y-M
	1	4.212	0.7510E+01	1.95	0.00

T.T.K.

PAGE 13

PROGRAM:ETABS/FILE:\QQ-00\488\488-E.EKO

EXAMPLE 1 : PLANE FRAME WITH BEAM SPAN LOADS

STATIC GRAVITY LOAD ANALYSIS UNITS: KIL-METER-SECOND

LOAD CASE DEFINITION DATA

LOAD	LTYP	I	II	III	A	B	C	D1	D2
1	0	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	0	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000
3	0	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000

FOR DYNAMICS BY THE RESPONSE SPECTRUM METHOD

DYNAMIC 1 . . . SPECTRAL DIRECTION 1

DYNAMIC 2 . . . SPECTRAL DIRECTION 2

FOR DYNAMICS BY THE TIME HISTORY METHOD

DYNAMIC 1 . . . TIME HISTORY MODAL ANALYSIS

DYNAMIC 2 . . . NOT USED

