Εργαστήριο Αντισεισμικής Τεχνολογίας

Εισαγωγή στη χρήση του προγράμματος SeismoStruct

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ανανέωση: 11 Μαΐου 2015

που θα βρείτε το πρόγραμμα



άδεια χρήσης

Α Ζητάψο	ς ακαδημαϊκή άδεια με το mail του
Πολυτ	εννείου αλλά
2. δουλε	ύουμε με την δοκιμαστική έκδοση
SeismoStruct Registra	tion
Registration	Options SeismoStruct Registration
Continue Trial	License Information: Temporary License
Acquire Commercian Register	YOU HAVE 29 DAYS LEFT
Exit Internet Connection St CONNECTED	atus: You can: - Continue using the program in trial mode
	(a valid academic e-mail address is needed)

Εάν δεν ζητήσετε ακαδημαϊκή άδεια, μετά από 30 μέρες το πρόγραμμα θα κλειδωθεί. Την ακαδημαϊκή άδεια θα την λάβετε μετά από λίγες μέρες.

εισαγωγική οθόνη



χρήση του wizard

Επιλέγουμε:

- 1. 3D-Frame
- 2. Δίνουμε περιγραφικά την γεωμετρία
- 3. Μπαίνουμε στην καρτέλα Structural Dimensions αριθμός φατνωμάτων

Αυτά είναι τα δεδομένα για την Άσκηση 12.

Έχουμε εισάγει περισσότερα δεδομένα από αυτά της κάτοψης, στη συνέχεια θα διαγράψουμε ότι δεν χρειάζεται



Επιλέγουμε ιδιομορφική ανάλυση (eigenvalue analysis)

καθορισμός γεωμετρίας

Ħ SeismoStruct Wizar	d			X	
Structural Model	EStructural Co	onfiguration	Reference Dimensions		
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00 Europa	- P	Number of Frames: 4	Frame 5	pacing (m): 6	
					Άσκηση 12
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		7th bay 1,00	7th storey 1,00	7 to 8 1,00	
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Επιλέγουμε ιδιομορφική ανάλυση (eigenvalue analysis)

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Τροποποίηση του φορέα

Διαγραφή όλων των στοιχείων και των κόμβων που δεν υπάρχουν στην κατασκευή.



στοιχεία / elements



Κόμβοι / Nodes



διαγραφή/εισαγωγή φορτίων

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Συνοριακές συνθήκες / στηρίξεις



Ιδιότητες στοιχείων/διατομών

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new element class



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μάζες

New Element Class		X
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Εισάγουμε τις μάζες Μx, Μy και Mzz	Mx [tonne] 10, My [tonne] 10, Mz [tonne] 10, Mxx [tonne*m2] 0,	
Τα υπόλοιπα πεδία τα αφήνουμε μηδέν	Myy [tonne*m2] 0, Mzz [tonne*m2] 0,	Y

μάζες

Αφού ορίσουμε συγκεντρωμένες μάζες, φτιάχνουμε mass elements στα οποία τοποθετούμε την αντίστοιχη μάζα

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διόρθωση διατομών των στοιχείων

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o habida	col222	col	n222 n223 deg=0	0,					
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1	col121	kolwnes	n121 n122 deg=0,00	0,	Element End Nodes	Element Orientation			
Table Input	col122	kolwnes	n122 n123 deg=0,00	0,	Node 1:	Define by Rotation An	ngle		
	col332	col	n332 n333 deg=0,00	0,	Node 2:	Rotation Angle 0.00	T IZ		
Graphical Input	col331	col	n331 n332 deg=0	0,	n213				
	col112	col	n112 n113 deg=0	0,	,	Define by Additional Nod	des	<u> </u>	
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	bmy232	beam	n232 n242 deg=0	0,					70 100 100 av
	bmy223	beam	n223 n233 deg=0	0,	Releases & Offsets		(coords)	<u> </u>	17 CM
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	bmy313	beam	n313 n323 deg=0	0,		dY ID.	_		
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εκτελούμε την ανάλυση



ανάλυση

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επεξεργασία αποτελεσμάτων



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Κόμβοι στο κέντρο βάρους

προσθέτουμε κόμβους στις θέσεις του Κ.Β κάθε στάθμης:

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Κόμβοι στο κέντρο βάρους

Συνδέουμε τους νέους κόμβους με το διάφραγμα

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Ιδιομορφικά διανύσματα

επαναλαμβάνουμε την ιδιομορφική επίλυση και πηγαίνουμε στην αντίστοιχη καρτέλα:

1		Deformation Arr	alifiary EOO O	,	mate 3D model				
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Ιδιομορφικά διανύσματα

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επιβολή ιδιομορφικών φορτίων

- υπολογίζουμε τα ιδιομορφικά φορτία Fi = $Φ_i S_a [m] r (π.χ. στο Excel)$
- επιβάλλουμε τα ιδιομορφικά φορτία στους κόμβους του KB.

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αλλαγή τύπου ανάλυσης

Αλλάζουμε τον τύπο ανάλυσης από EigenValue σε Static (non-variable)

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διαχείριση μυνημάτων λάθους

διαγράφουμε τα Performance Criteria για να αποφύγουμε μηνύματα λάθους

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εκτέλεση της ανάλυσης

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Static analysis (non-variable load) V V Pre-Processor		
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Structural Displacements Forces and Moments at Supports Performance Criteria Checks		
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ανάγνωση αποτελεσμάτων - δυνάμεις

