

# Section cuts for beam modeled by frame and shell elements with different discretizations

Program: SAP2000  
Version: 18.0.1  
Date: 1/8/2016  
Author: ok

Model ID: 591  
Model version: run1

# Purpose

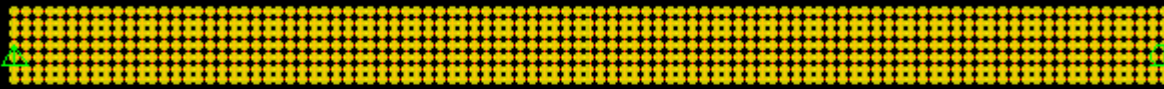
- Illustrate various options for defining section cuts and interpreting the section cut results.

# Model Description



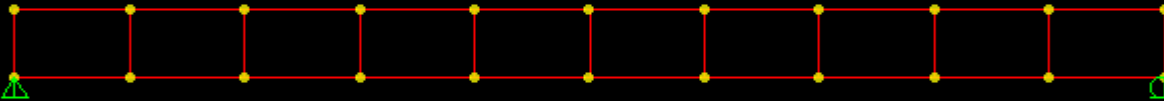
X-Z Plane @ Y=0

Z = 15m



Area with 0.2m long elements (beam A2)

Z = 10m



Area with 2m long elements (beam A1)

Z = 5m



Frame with 0.2m long elements (beam F2)

Z = 0m



Frame with 2m long elements (beam F1)

# Discussion of Results

Section Cut Forces - Analysis

File View Format-Filter-Sort Select Options

Units: As Noted

Section Cut Forces - Analysis

Filter:

	SectionCut Text	OutputCase Text	CaseType Text	F1 KN	F2 KN	F3 KN	M1 KN-m	M2 KN-m	M3 KN-m	GlobalX m	GlobalY m	GlobalZ m
▶	A1-10-GROUP-BOTH	DEAD	LinStatic	6.253E-13	0	-6.48E-12	0	-8.882E-14	0	10	0	10.6
	A1-10-GROUP-LEFT	DEAD	LinStatic	2.075E-12	0	-4.476E-12	0	-50	0	10	0	10.6
	A1-10-GROUP-LEFT-NO-PTS	DEAD	LinStatic	0	0	0	0	0	0	0	0	0
	A1-10-GROUP-RIGHT	DEAD	LinStatic	-1.45E-12	0	-2.004E-12	0	50	0	10	0	10.6
	A1-9.9-PLANE	DEAD	LinStatic	2.075E-12	0	-4.476E-12	0	-50	0	9.9	0	10.6
	A2-05-GROUP-LEFT	DEAD	LinStatic	-1.077E-10	4.16E-15	-5	4.809E-15	-37.5	1.546E-16	5	0	15.6
	A2-4.99-PLANE	DEAD	LinStatic	-1.077E-10	4.16E-15	-5	4.809E-15	-37.5	1.546E-16	5	0	15.6
	F1-10-GROUP-BOTH	DEAD	LinStatic	0	0	4.03E-14	0	7.105E-15	0	10	0	0
	F1-10-GROUP-LEFT	DEAD	LinStatic	0	0	4.041E-14	0	-50	0	10	0	0
	F1-10-GROUP-LEFT(x)	DEAD	LinStatic	0	0	4.041E-14	0	-50	0	9.9	0	0
	F1-10-GROUP-LEFT-NO-PTS	DEAD	LinStatic	0	0	0	0	0	0	0	0	0
	F1-10-GROUP-RIGHT	DEAD	LinStatic	0	0	-1.11E-16	0	50	0	10	0	0
	F1-9.9-PLANE	DEAD	LinStatic	0	0	4.041E-14	0	-50	0	9.9	0	0
	F2-05-GROUP-LEFT	DEAD	LinStatic	0	0	-5	0	-37.5	0	5	0	5
	F2-4.99-PLANE	DEAD	LinStatic	0	0	-5	0	-37.5	0	5	0	5

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Add Tables...

Done

Red highlighted values are checked via regression testing