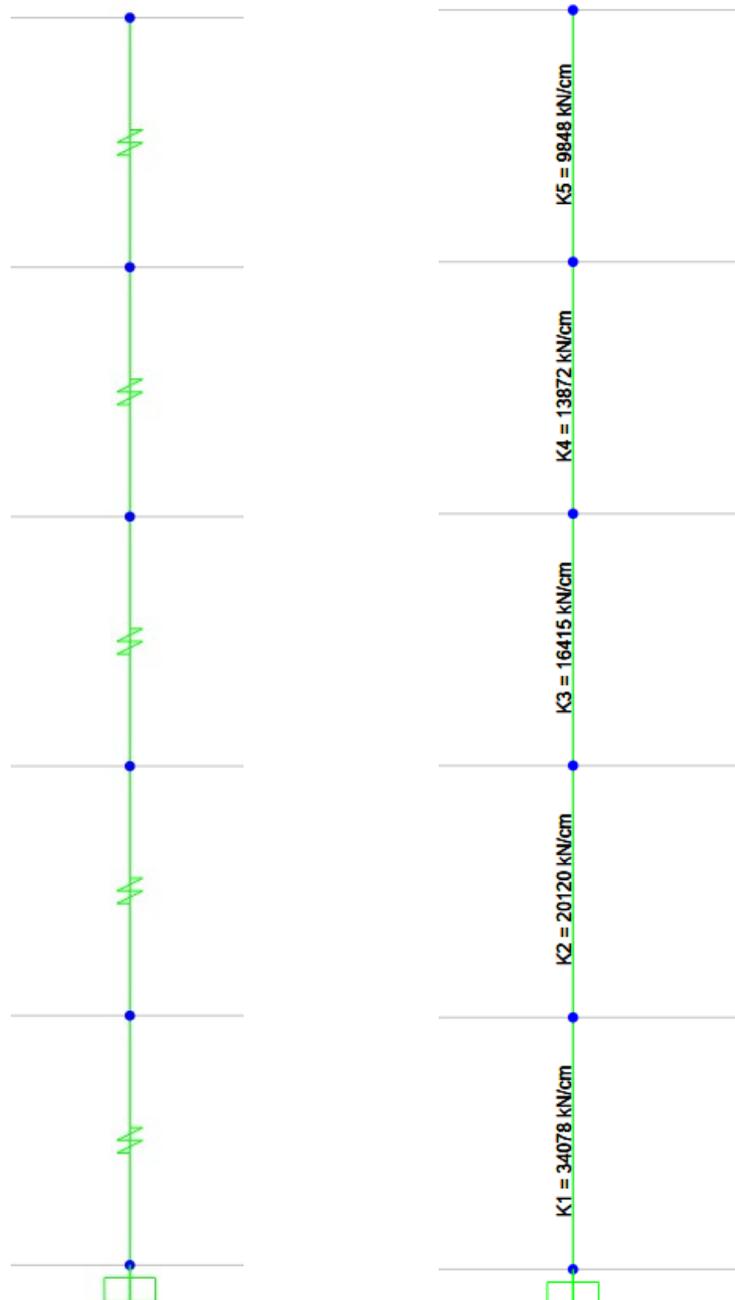




Ingreso de datos:

```
1 "##### INPUT #####"  
2 h = 255 #cm  
3 k = [34078, 20120, 16415, 13872, 9848] #kN/cm  
4 m = [2.9,2.9,2.9,2.9,2.9] #kN-s2/cm  
5 Soil, Zona, U, R = "Rigid", 4, 1.0, 3  
6 Cd = 0.85*R
```

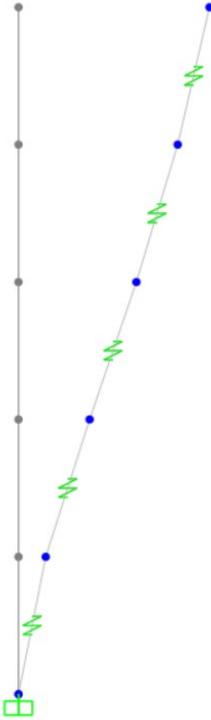
MODELO SAP2000





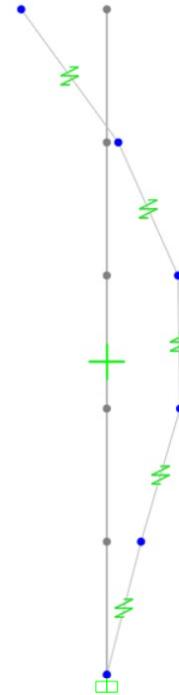
RESULTADOS MODALES DEL SAP2000

Deformed Shape (MODAL) - Mode 1; T = 0.26435; f = 3.7829



Modo 1 – T=0.26435

Deformed Shape (MODAL) - Mode 2; T = 0.10125; f = 9.87643



Modo 2 – T=0.10125

Deformed Shape (MODAL) - Mode 3; T = 0.06574; f = 15.21048

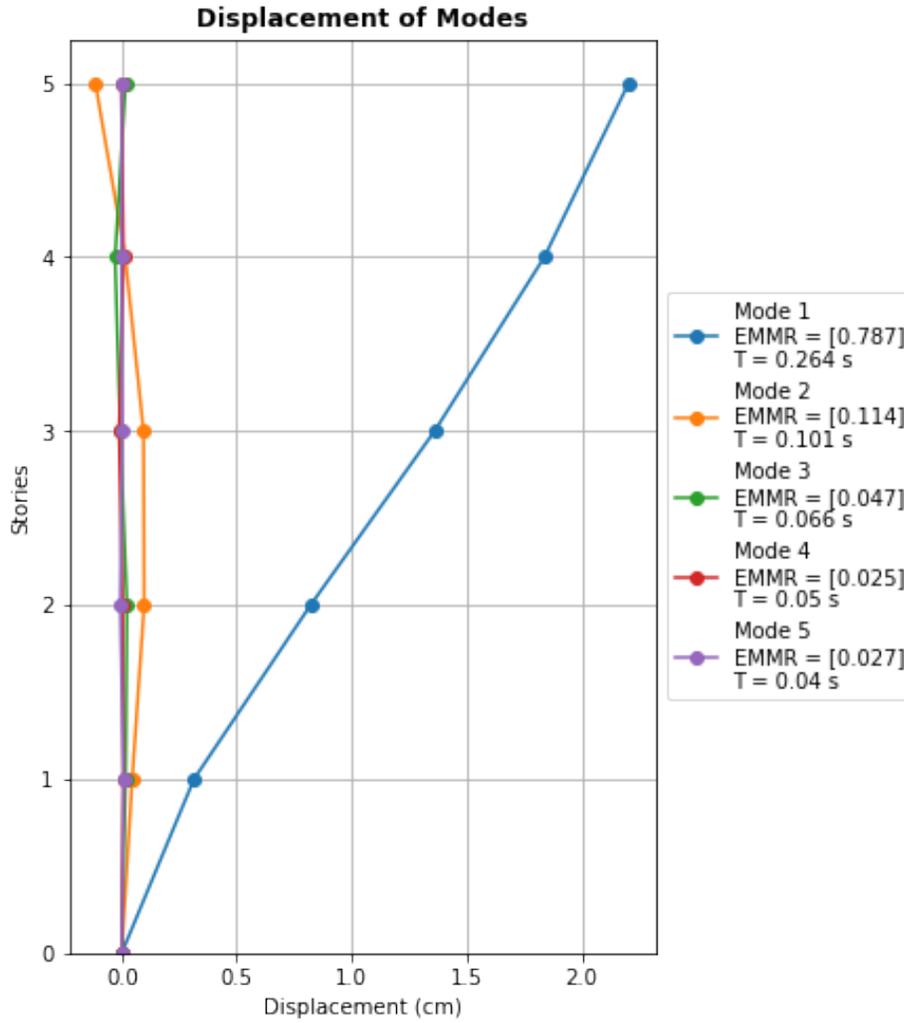


Modo 3 – T=0.06574

Deformed Shape (MODAL) - Mode 4; T = 0.05023; f = 19.90851



Modo 4 – T=0.05023



Comparación de resultados de los cálculos en Python y SAP2000

	Period Sec	Mass Ratio X	Mass Ratio Acum. X
Mode 1	0.2643	[0.7872]	0.787
Mode 2	0.1013	[0.1145]	0.902
Mode 3	0.0657	[0.0466]	0.948
Mode 4	0.0502	[0.0247]	0.973
Mode 5	0.0405	[0.0271]	1.000

S Modal Participating Mass Ratios

File View Edit Format-Filter-Sort Select Options

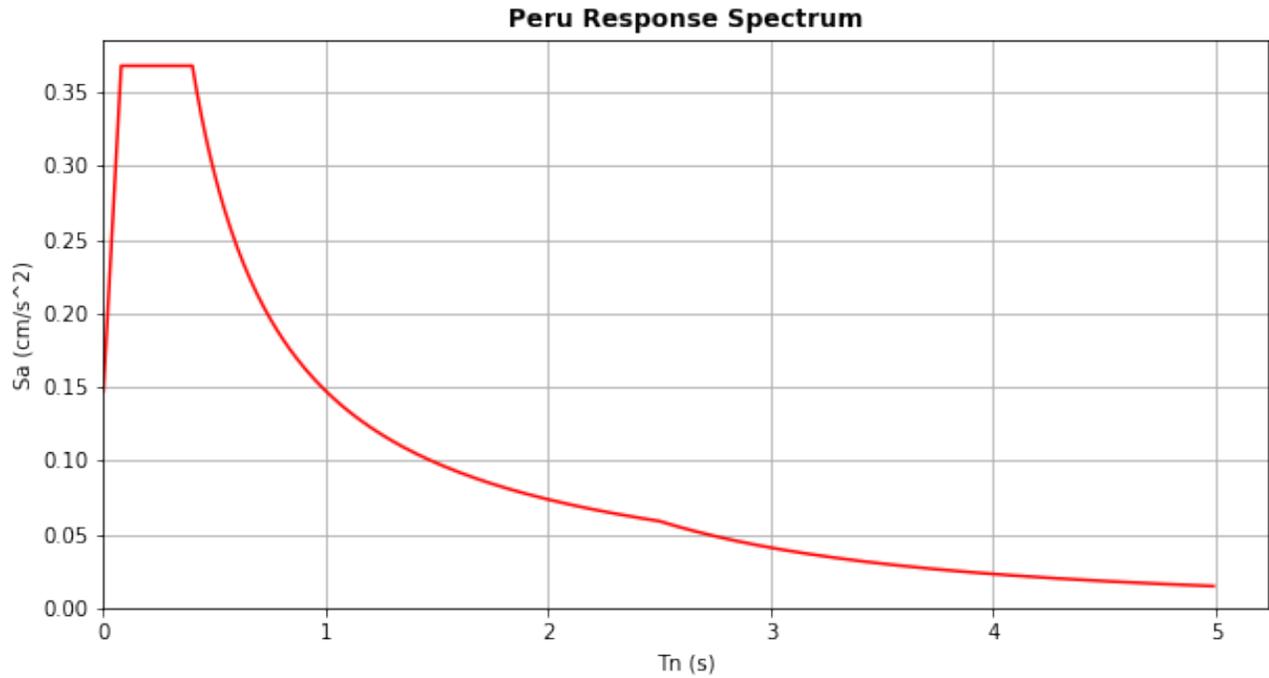
Units: As Noted Modal Participating Mass Ratios

Filter:

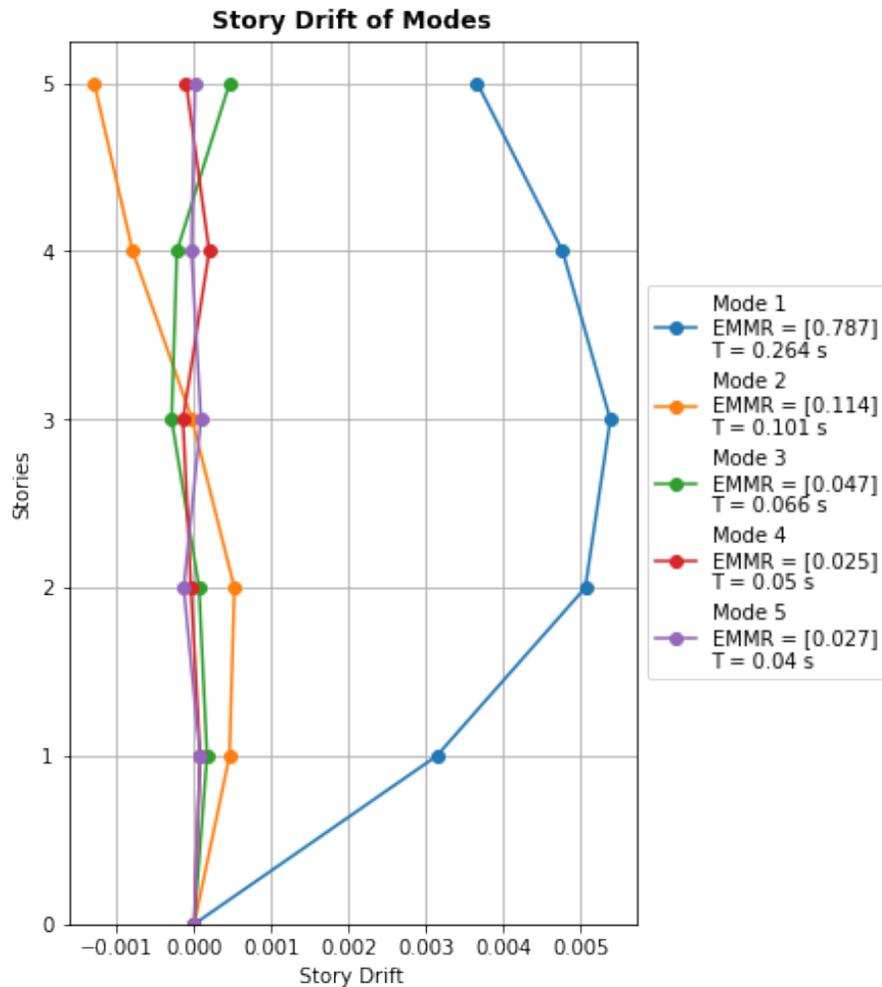
	OutputCase	StepNum Unitless	Period Sec	UX Unitless	SumUX Unitless	RX Unitless	RY Unitless	RZ Unitless	SumRX Unitless	SumRY Unitless
▶	MODAL	1	0.264347	0.787	0.787	0	0.212	0	0	0.212
	MODAL	2	0.101251	0.114	0.902	0	0.477	0	0	0.689
	MODAL	3	0.065744	0.047	0.948	0	0.132	0	0	0.82
	MODAL	4	0.05023	0.025	0.973	0	0.084	0	0	0.905
	MODAL	5	0.040466	0.027	1	0	0.095	0	0	1

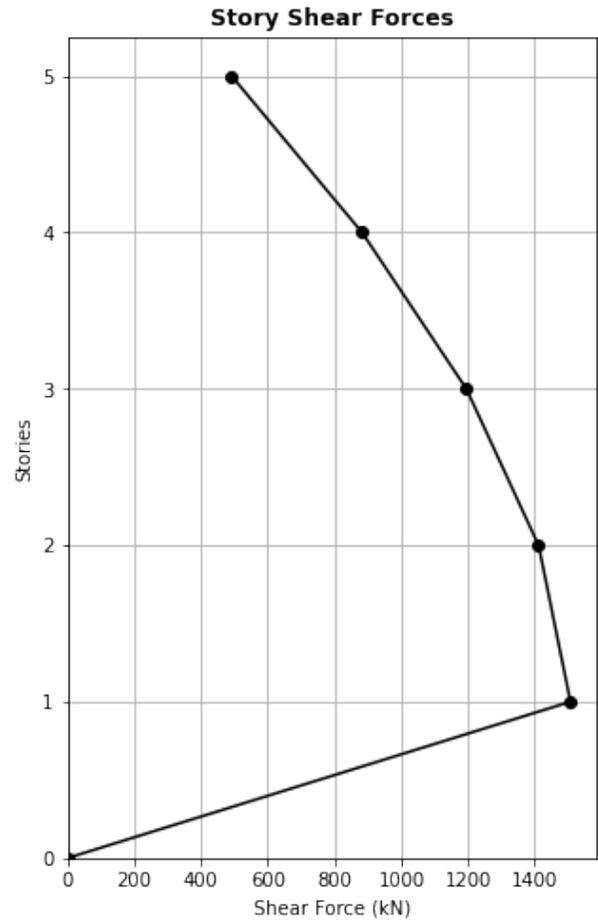
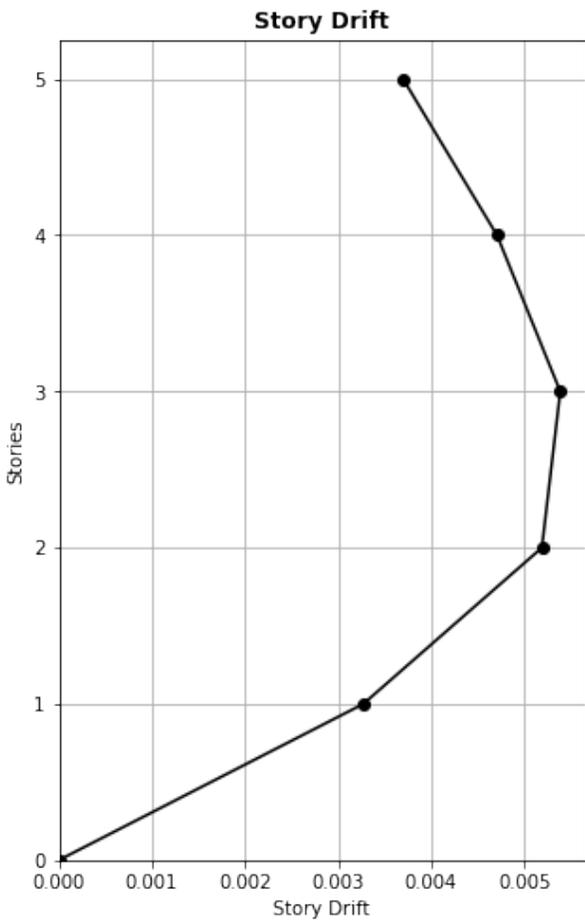
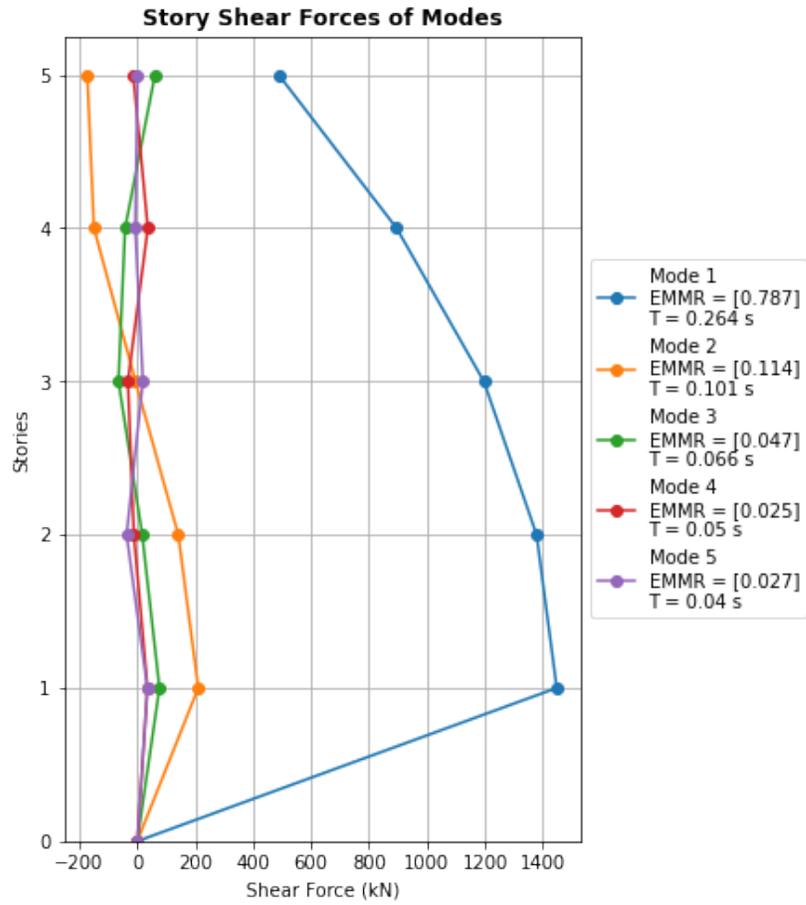


Espectro de respuesta Elástico de Diseño de la nueva norma Peruana



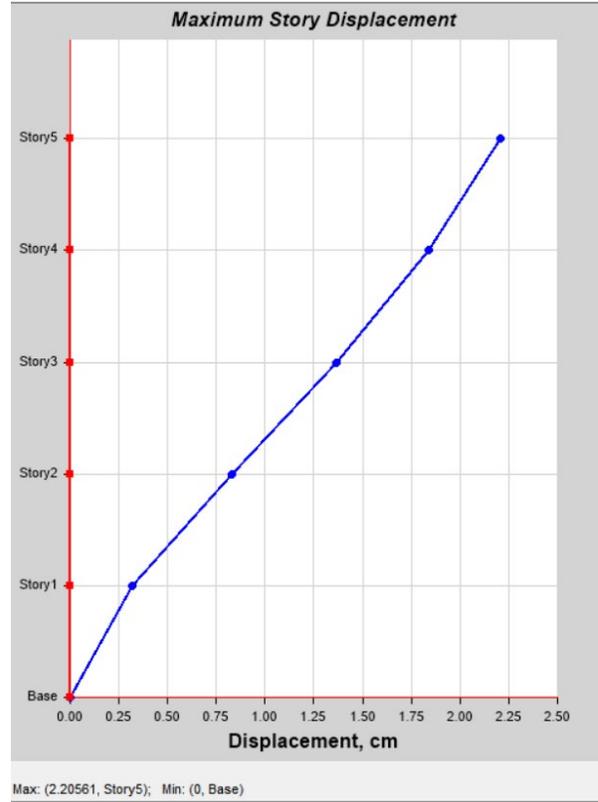
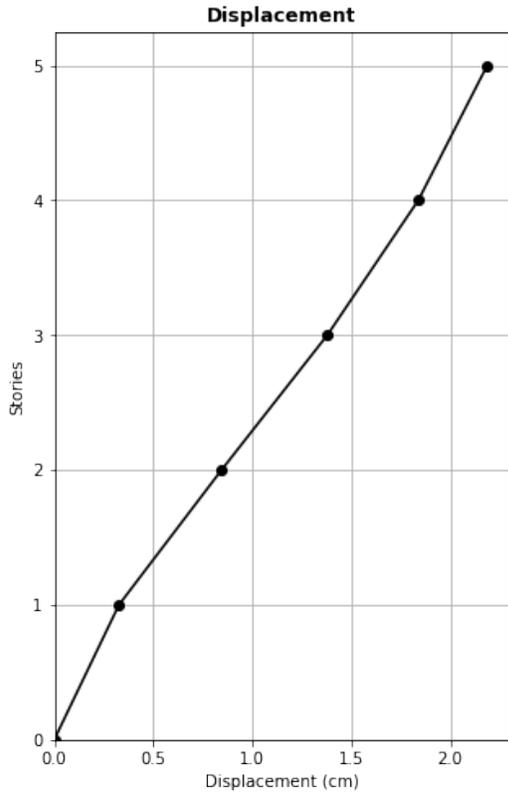
Resultados Modales en Python



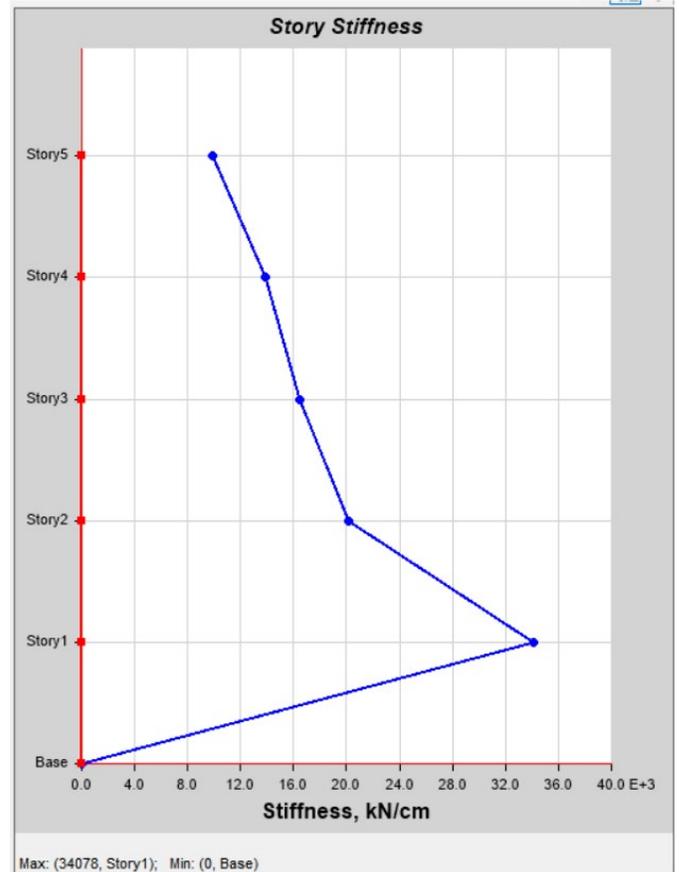
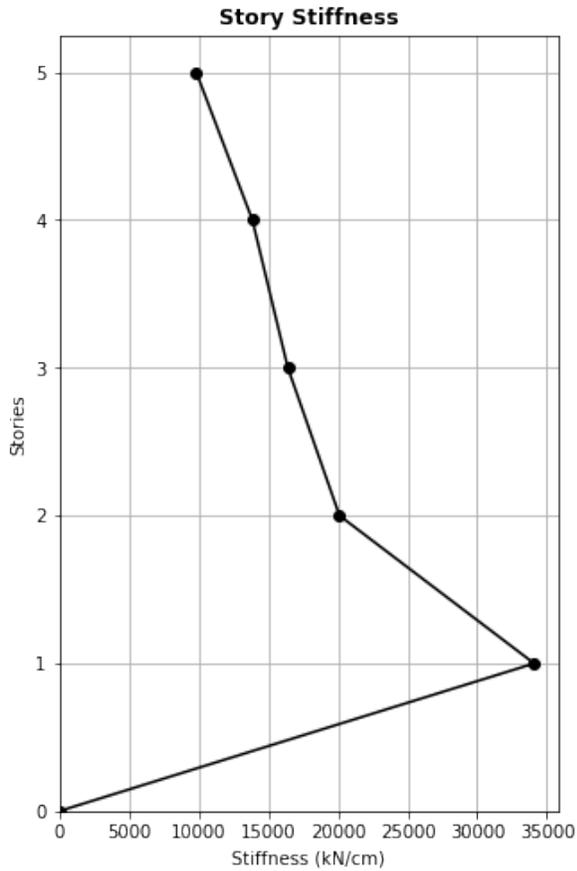




Comparación de desplazamientos obtenidas en Python y Etabs



Comparación de rigideces obtenidas en Python y Etabs



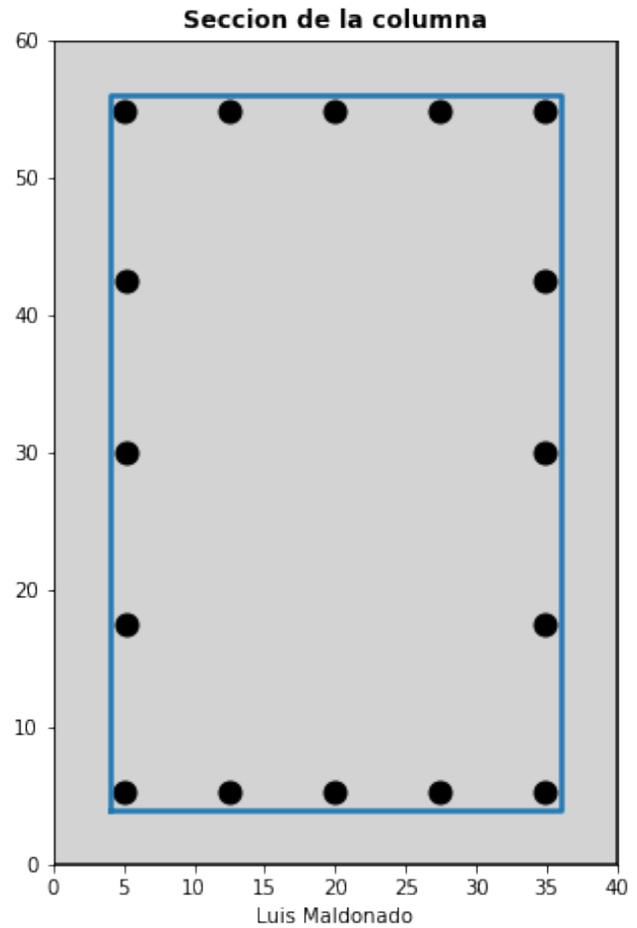
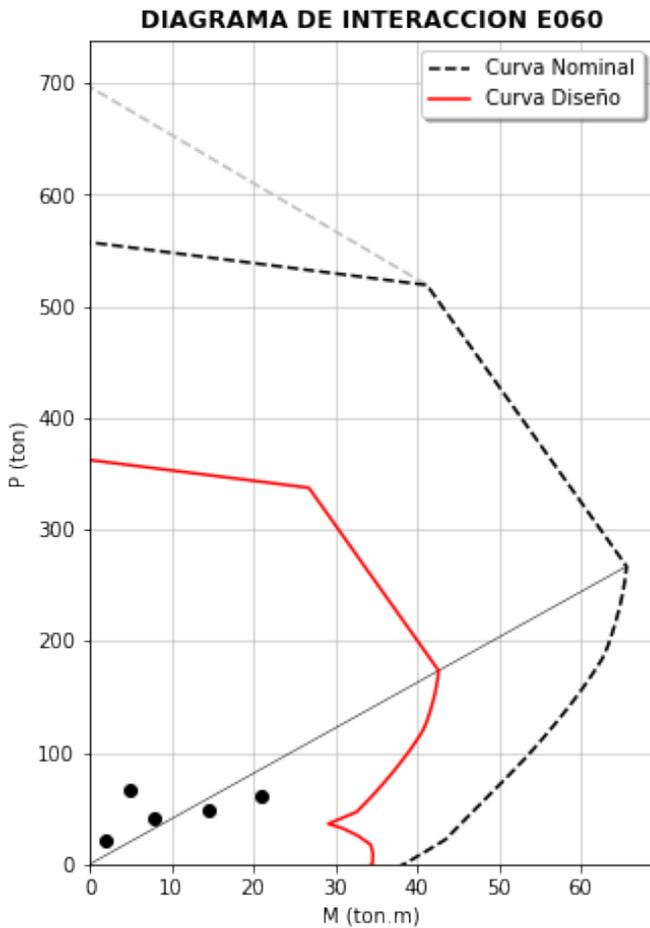


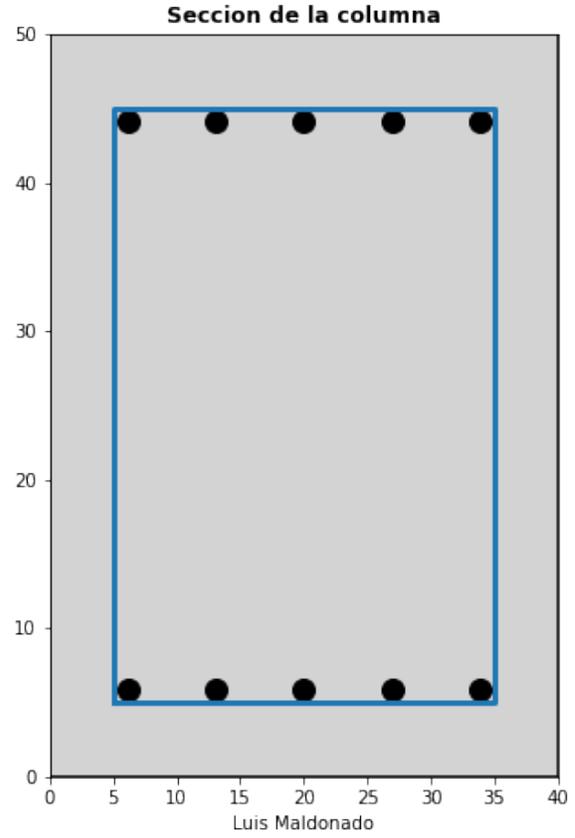
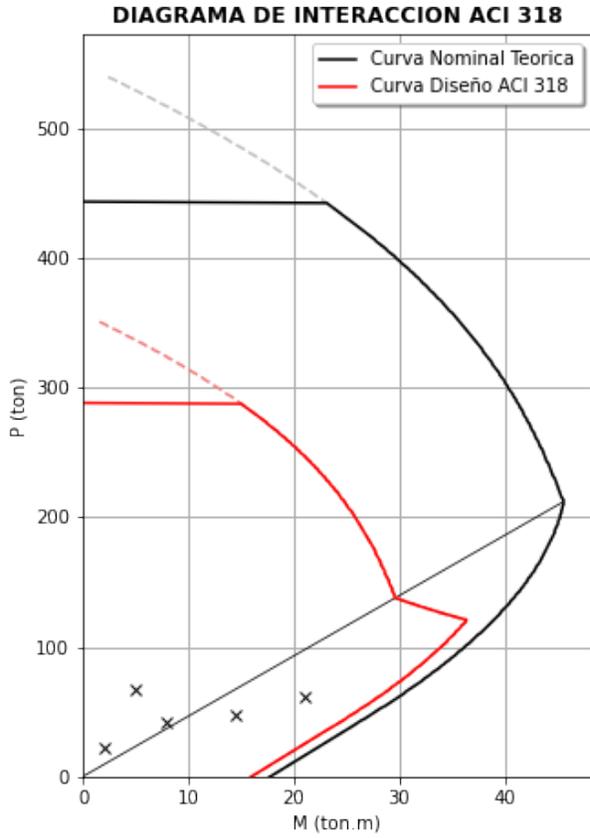
PRÓXIMAS PUBLICACIONES

DISEÑO DE COLUMNAS DE CONCRETO ARMADO SEGÚN LAS NORMA PERUANA E060 Y EL ACI 318-19, COMPARACIÓN CON LOS RESULTADO DEL SAP2000

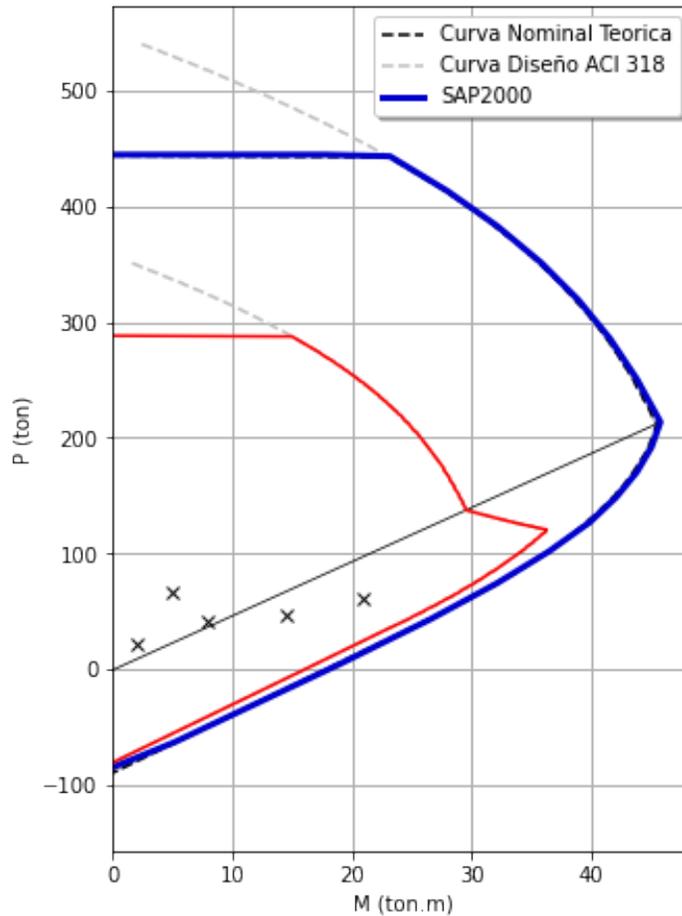
```

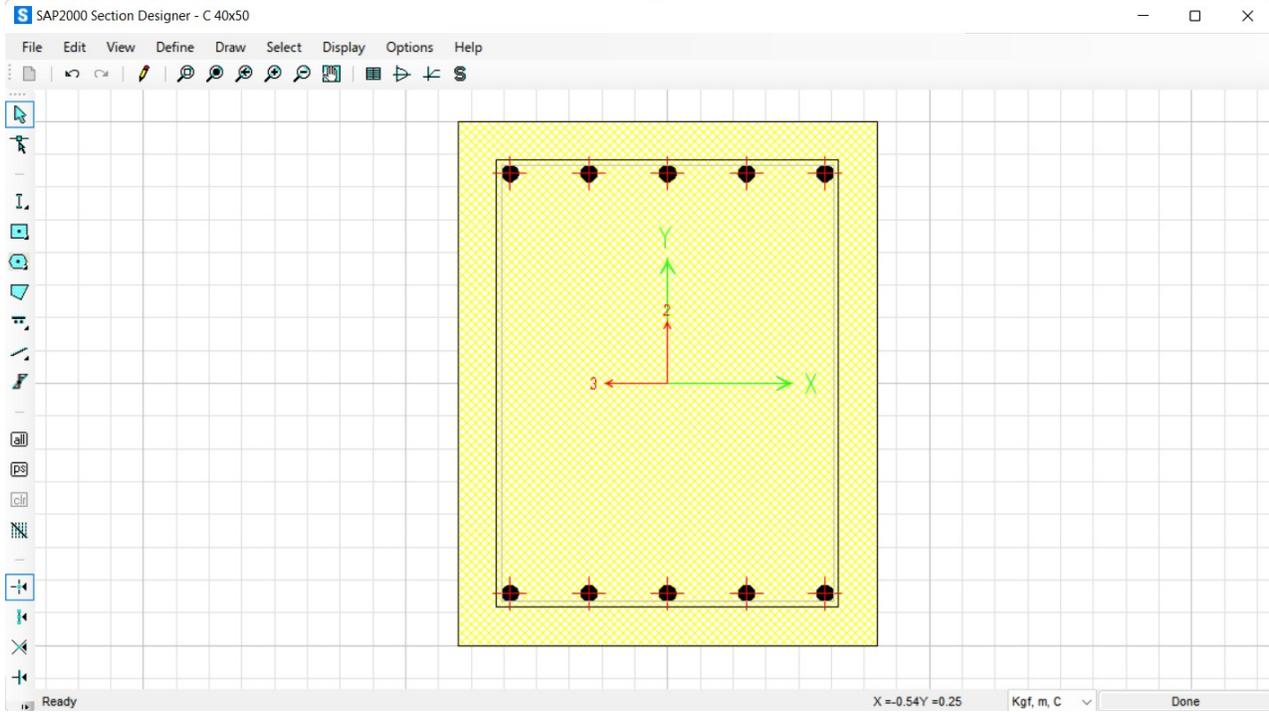
1 r=4                #recubrimiento
2 fc1=280            #kg/cm2    #Resistencia a la compresion del concreto
3 fy1=4200           #kg/cm2    #Resistencia a la fluencia del acero
4 Es=2.00*10**6      #kg/cm2    #Modulo de elasticidad del acero
5 base=40            #cm
6 altura=60          #cm
7 numero_aceros_x=3
8 numero_aceros_y=4
9 carga_momento=[14.5,5,2,8,21]    #ton.m    X
10 carga_compresion=[48,67.2,22,42,62]    #ton    Y
11 diametros="5/8"    #pulg    "1/4"    "3/8"    "1/2"    "5/8"    "3/4"    "1"
  
```





COMPARACION CON LOS RESULTADOS DEL SAP2000 DIAGRAMA DE INTERACCION ACI 318





Interaction Surface (ACI 318-14)

Edit

	P	M2	M3
1	-444192	0	0
2	-444192	0	12228
3	-444192	0	17793
4	-442802	0	23205
5	-412896	0	28003
6	-382401	0	32210
7	-351175	0	35853
8	-319025	0	38971
9	-285680	0	41620
10	-250756	0	43874
11	-213684	0	45850
12	-192078	0	45107
13	-170471	0	43873
14	-148865	0	42150
15	-127258	0	39935
16	-102071	0	36513
17	-74778	0	32179
18	-49692	0	28505

Curve 1
Angle 0

Design-Code Curve
 Fiber-Model Curve

Design Options

phi
 no phi
 no phi with fy increase

3D View

315 Plan
35 Elevation

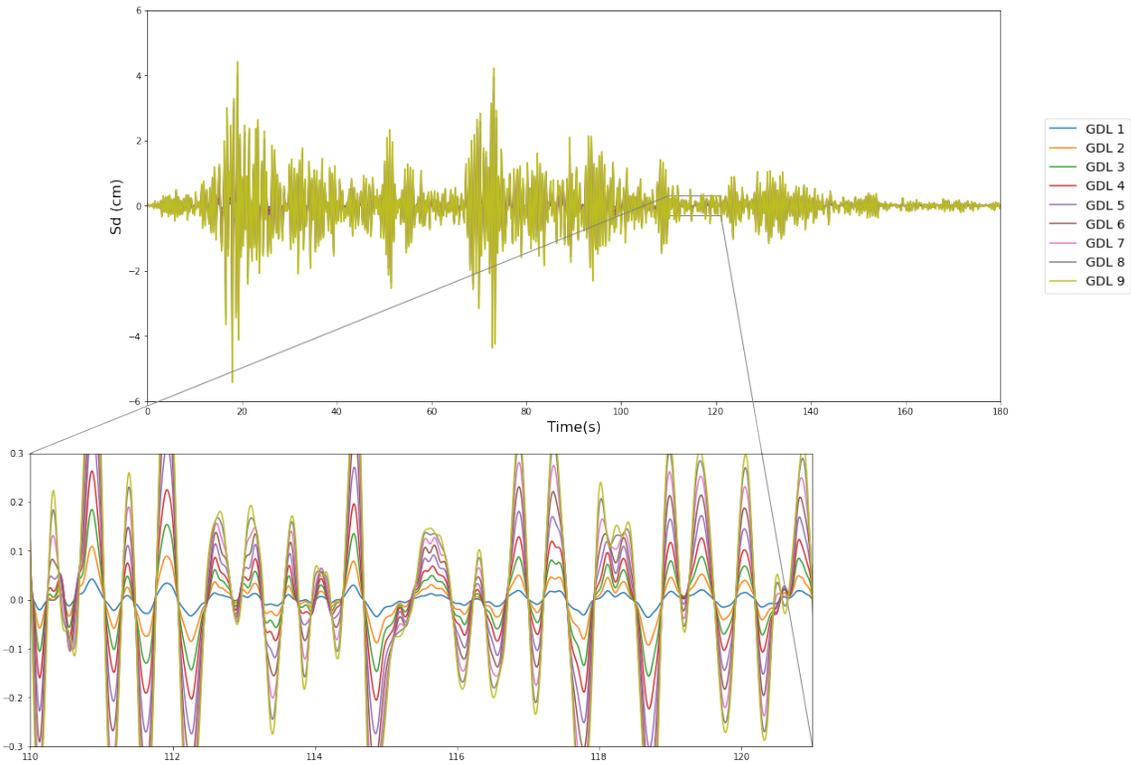
3d MM PM3 PM2

Show Design-Code Results
 Show Fiber-Model Results

Done



Análisis de varios grados de libertad con el Método de Newmark



Animación de la respuesta en el Tiempo

