Dynamic of Structures

MATLAB COD

Deformation, Pseudo-velocity, and Pseudo-acceleration Response Spectra

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North–south component of horizontal ground acceleration recorded at the Imperial Valley Irrigation District substation, El Centro, California, during the Imperial Valley earthquake of May 18, 1940.

Program:

Step1: verify

The time variation of the deformation induced by this ground motion for SDF systems (natural Period=0.5,damping=0.02)

```
% NAME of PROGRAM : The time variation of the deformation induced by
%this ground motion for  SDF systems (natural Period=0.5,damping=0.02)
% WRITER BY: ALI SALEHI (Pcc.s@hotmail.com)
% Start Program

clc
clear
close all

% input-------------------------------------------------------------
% DELTA t:Dt
Dt=0.02;  %sec
g=386;   %in/sec2

nr=195;
nc=8;

%Input data ground acceleration record
acc=zeros(1,nr*nc);
z=importdata ('H:\ELCENTRO2.DAT');
m=1;

for jr=1:nr;
for jc=1:nc;
acc(m)=z(jr,jc);
m=m+1;
end
end

%KESI: D
D=0.02;
```