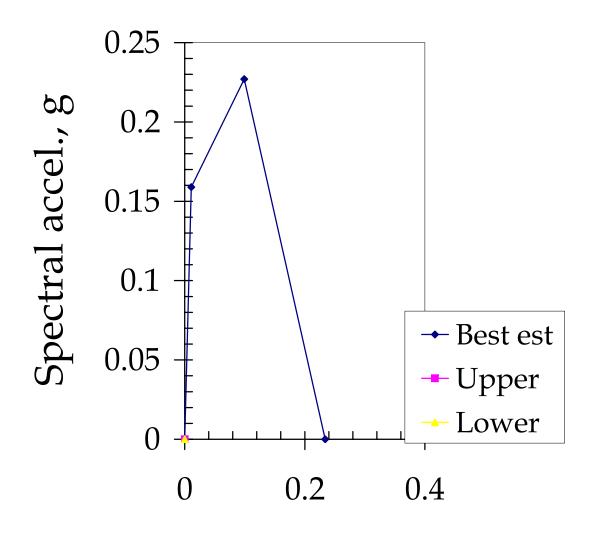
DS4 Serravalle

	E-PAGER PHASE 2: DE	VELOPMENT OF ANAL	YTICAL SEISMIC VULNERABILITY FUNCTIONS		
Author:					
Date:	1-Sep-09				
Structure type (describe as broadly as possible):	PAGER-STR Type DS4				
Geographic or other limitations:	Serravalle			Add rows as desired	
				Add Tows as desired	
	Units Parameter	Choice of pushover	curve parameters		
Pushover X-axis:	Sd(m) Deltar	Choose spectral displacer	ment (Sd); or Roof displacement (Deltar). State units		
Pushover Y-axis:	Sa(g) Sa		tion (Sa); or base shear (V). State units.		
Elastic damping ratio:		Small-amplitude damping			
st mode participation factor:			; same as (effective height)/(total roof height)		
Effective mass coefficient:		94 alpha1; generally 0.7 to 0.5	.8		
Building weight: How were these values & pushover points derived?	Using FaMIVE data set	ne fi W State units			
Ref: D'Ayala D., Speranza E, 'Definition of Collapse		norobility of Historia Masonry	v Duildings' Forthquaka Sportes: 10: 470-500	Add rows as desired	
ter. D Ayara D., Speranza E., Demintion of Conapse	viechanisms and Seismic vun	Pushover Curve for 1		Add lows as desired	
	See Figures 1-4 for	sample pushover curves	tills structure type		
Pushover curve control poin		Y Damping Comment			
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	0.099 0.2		E.g., ultimate point?		
[0.234 0.0	00	E.g., beginning of lower plateau?		
t	=		Add rows as desired		
	Optional: upper and	lower-bound range of	pushover curves for this structure type		
Jpper-bound pushover curve, e.g., 99 out of 100 buildir					
Author's meaning of "upper bound":					
low were these values & pushover points derived?				Add rows as desired	
	See Figures 1-4 for	sample pushover curves		Add lows as desired	
		ound pushover curve			
Pushover curve control poin		Y Damping Comment	<u></u>		
	Λ	0	Control point for plotting purposes		
,	- U		E.g., yield point?		
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			E.g., ultimate point? E.g., beginning of lower plateau?		
i C L			E.g., ultimate point?		
	lgs of this type would have pu	Ishover curve inside the area to	E.g., ultimate point? E.g., beginning of lower plateau? Add rows as desired		
uthor's meaning of "lower bound":	ngs of this type would have pu	Ishover curve inside the area to	E.g., ultimate point? E.g., beginning of lower plateau? Add rows as desired		
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uthor's meaning of "lower bound":	See Figures 1-4 for	sample pushover curves	E.g., ultimate point? E.g., beginning of lower plateau? Add rows as desired	Add rows as desired	
uthor's meaning of "lower bound": low were these values & pushover points derived?	See Figures 1-4 for Optional lower-b	sample pushover curves	E.g., ultimate point? E.g., beginning of lower plateau? Add rows as desired	Add rows as desired	
uthor's meaning of "lower bound":	See Figures 1-4 for Optional lower-b	sample pushover curves	E.g., ultimate point? E.g., beginning of lower plateau? Add rows as desired bounded between this curve and the X-axis?	Add rows as desired	
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Spectral displ., Sd, m

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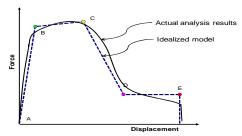


Figure 1: Force-displacement capacity boundary with all idealized segments present

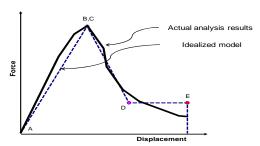


Figure 2: Force-displacement capacity boundary without strain hardening segment (e.g. buckling braced frame)

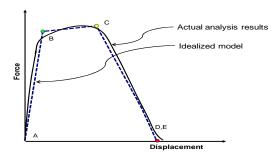


Figure 3: Force-displacement capacity boundary without lower strength plateau (e.g. unreinforced masonry)

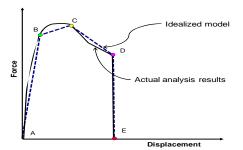


Figure 4: Force-displacement capacity boundary with pre-emptive vertical load failure