

## 【参考資料】

柏崎刈羽原子力発電所 6号及び7号炉

液状化試験結果一覧

平成28年9月

東京電力ホールディングス株式会社



【A-1 (埋戻土層)】

試料番号		#1-0-1				#1-0-2				
深度 G.L.- (m)		3.50~4.50				4.50~5.50				
土質材料		埋戻土層				埋戻土層				
供試体 No.		1	2	3	4	1	2	3	4	
土粒子の密度 $\rho_s$ (g/cm <sup>3</sup> )		2.710				2.720				
圧密圧力 $\sigma_c'$ (kN/m <sup>2</sup> )		50				100				
せん断応力比 $\tau_d/\sigma_c'$		0.25	0.30	0.20	0.35	0.26	0.21	0.24	0.29	
繰返回数	せん断ひずみ 両振幅	$\gamma_{DA}=1.5\%$	7.5	5.5	103	3.5	4.5	54	29	5.5
		$\gamma_{DA}=2.0\%$	8.5	7	106	5	5	56	32	6.5
		$\gamma_{DA}=3.0\%$	10	9	111	7.5	6	59	36	8
		$\gamma_{DA}=7.5\%$	16	15	119	27	8	64	46	12
		$\gamma_{DA}=15\%$	21	23	127	109	10	68	54	15
	間隙水圧比 95% $N_{u95}$		15	16	116	35	9	64	45	14

     : 最大過剰間隙水圧比が 1.0 に近づく (0.95 を越えるもの)

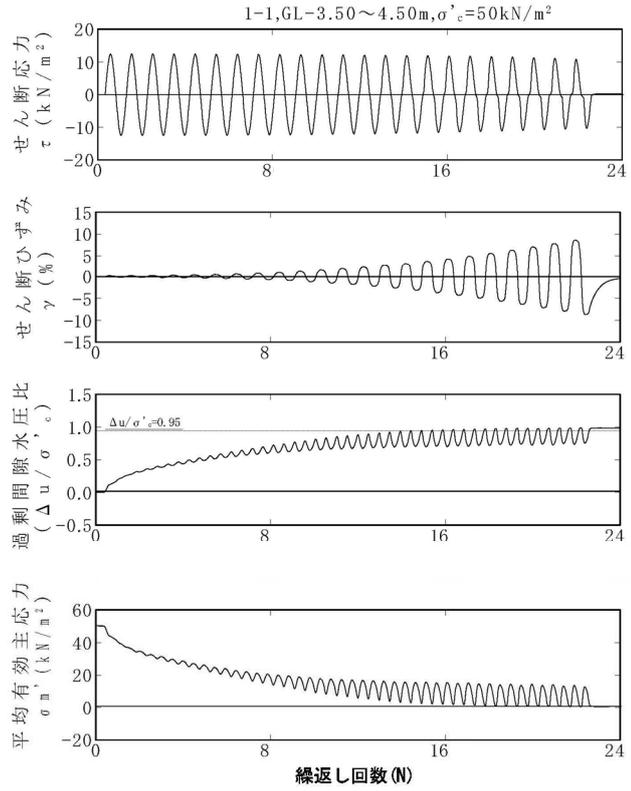
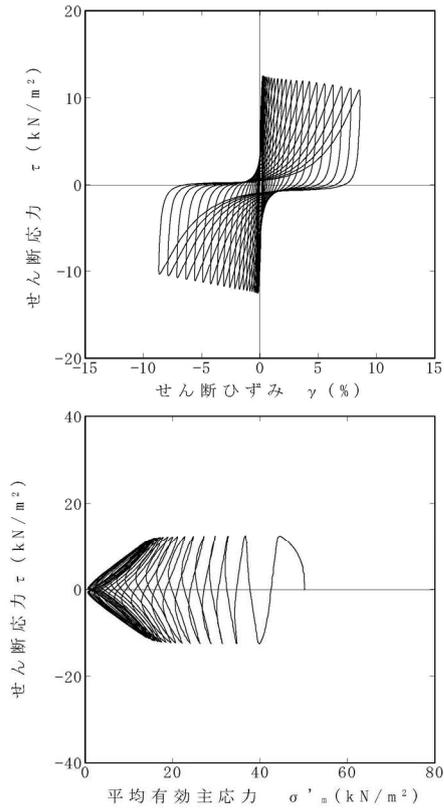


図 1-1-1 A-1 (埋戻土層) ( $\sigma'_c=50\text{kN/m}^2$ ,  $\tau_d / \sigma'_c=0.25$ )

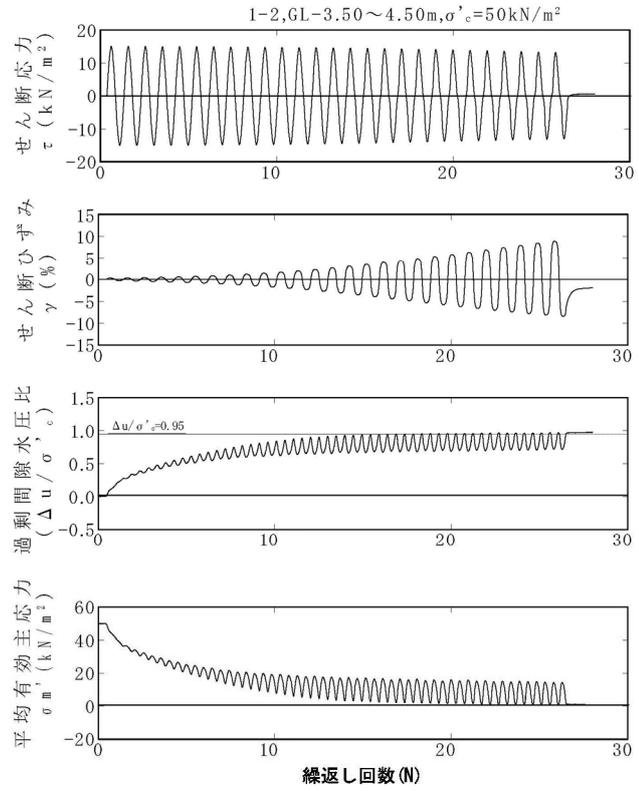
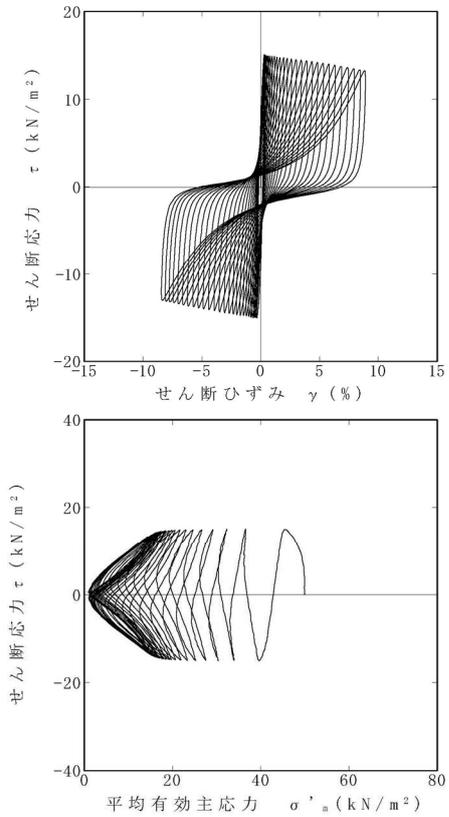


図 1-1-2 A-1 (埋戻土層) ( $\sigma'_c=50\text{kN/m}^2$ ,  $\tau_d / \sigma'_c=0.30$ )

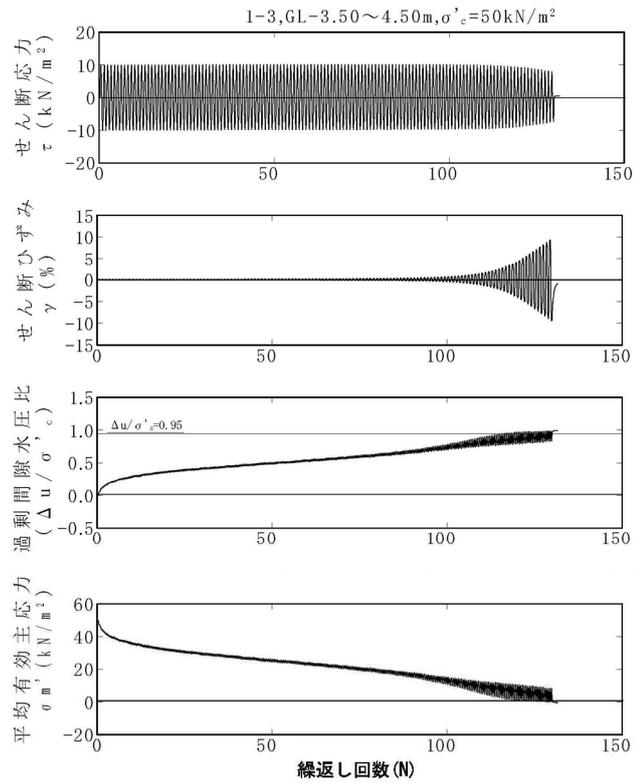
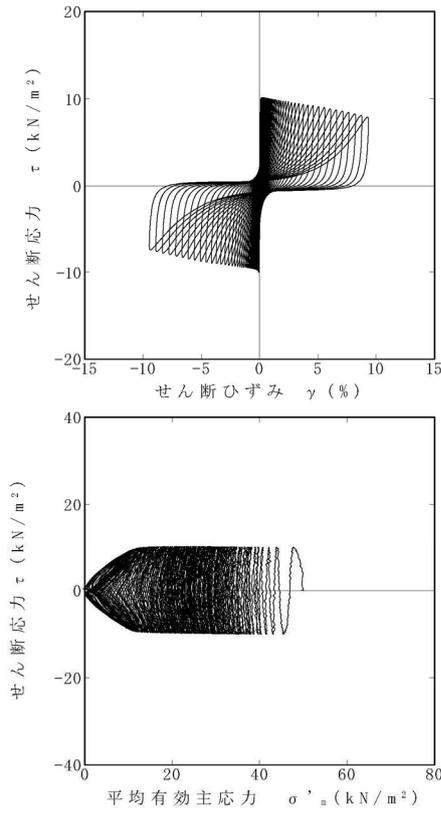


図 1-1-3 A-1 (埋戻土層) ( $\sigma'_c=50\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.20$ )

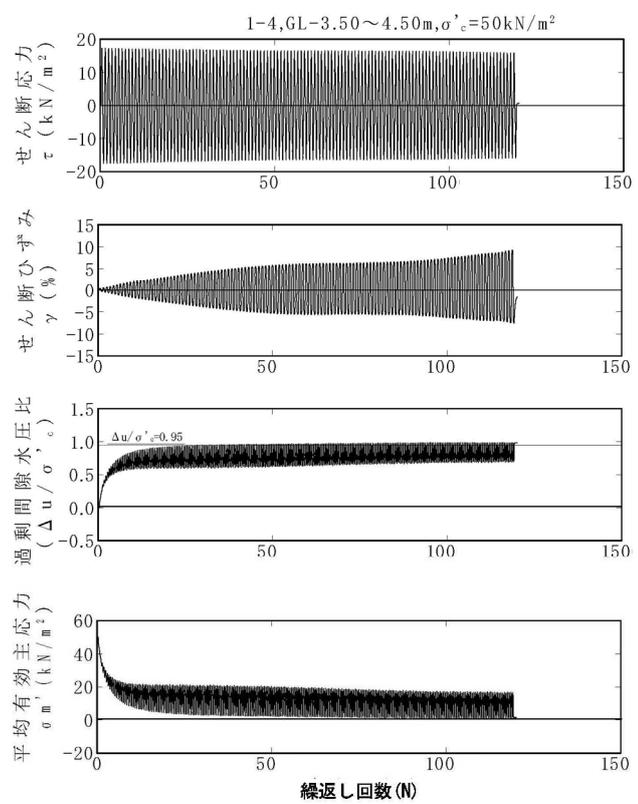
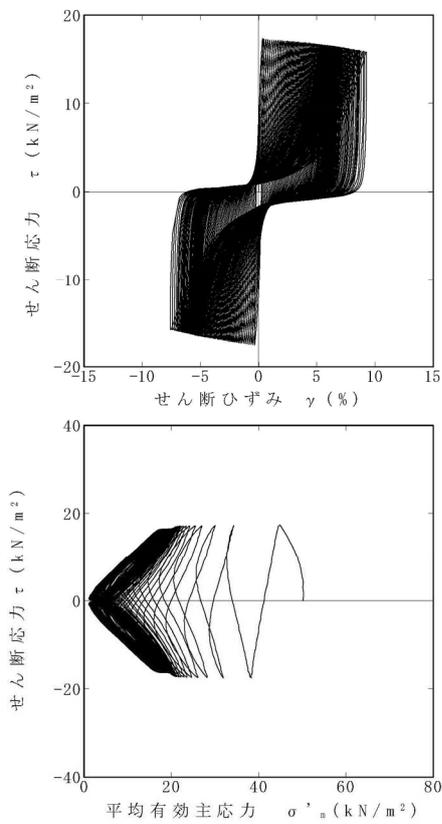


図 1-1-4 A-1 (埋戻土層) ( $\sigma'_c=50\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.35$ )

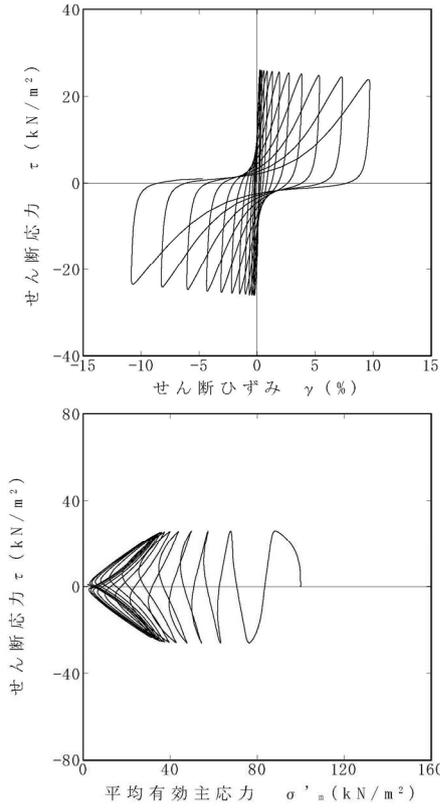


図 1-2-1 A-1 (埋戻土層) ( $\sigma'_c=100\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.26$ )

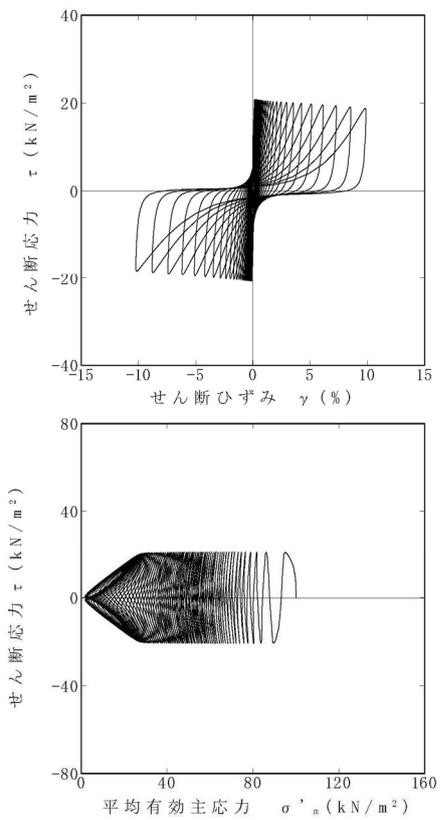
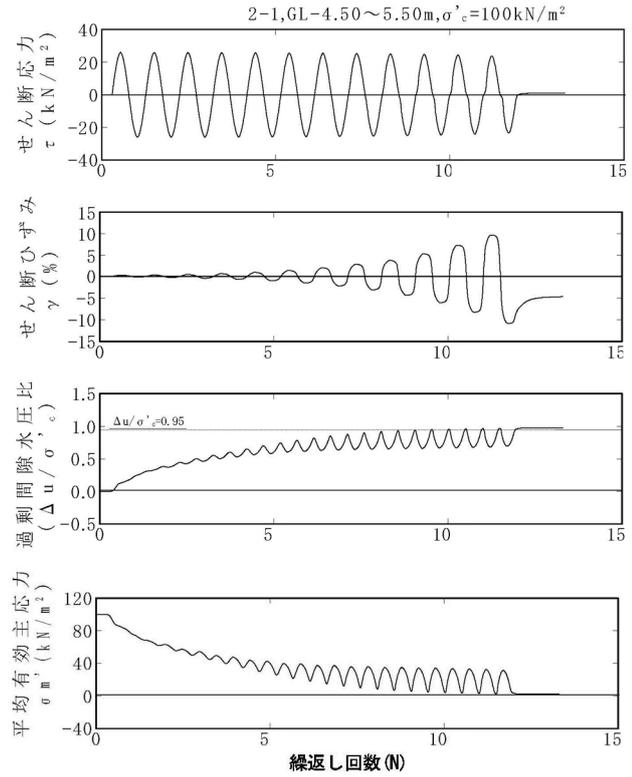
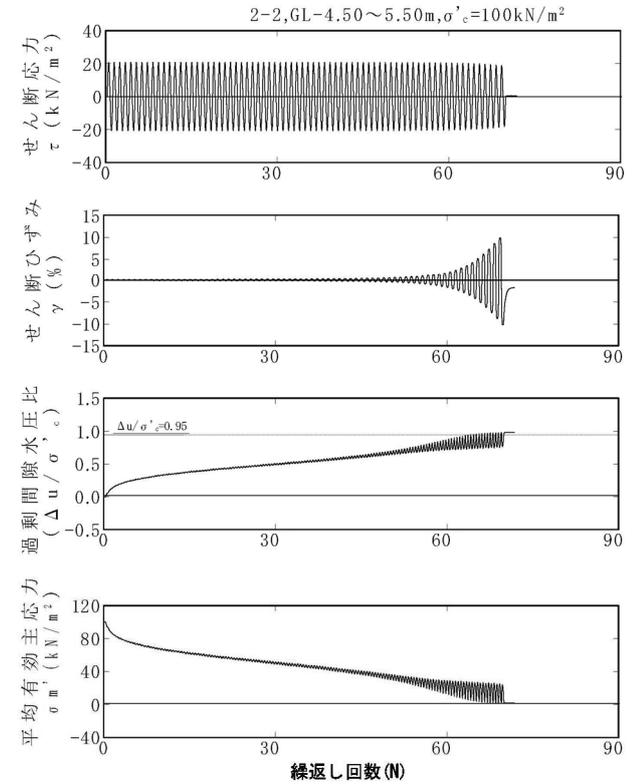


図 1-2-2 A-1 (埋戻土層) ( $\sigma'_c=100\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.21$ )



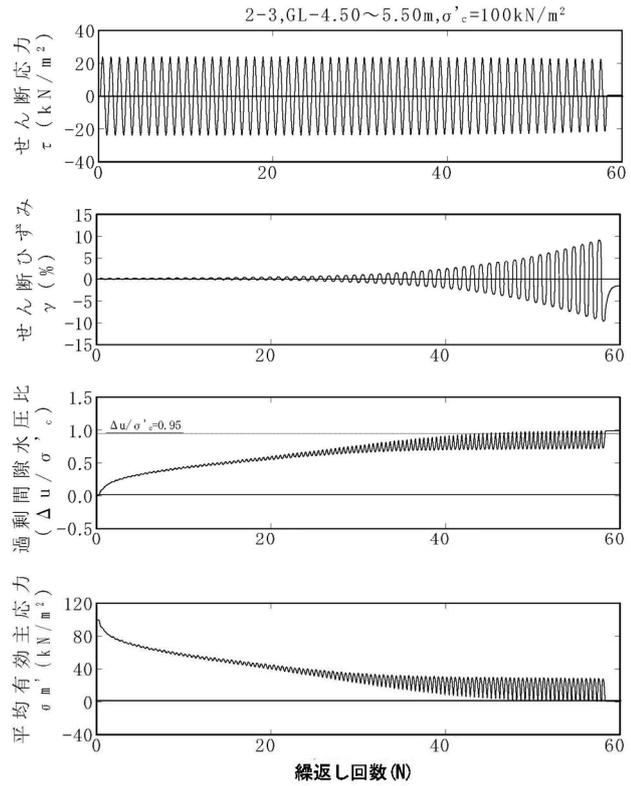
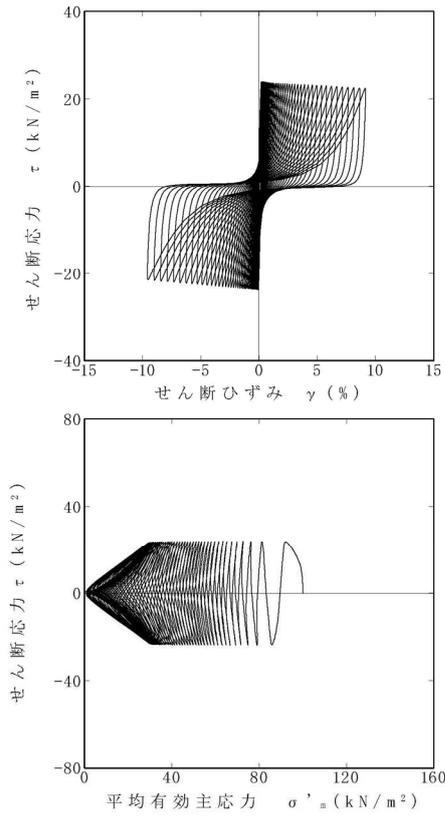


図 1-2-3 A-1 (埋戻土層) ( $\sigma'_c=100\text{kN/m}^2$ ,  $\tau_d / \sigma'_c=0.24$ )

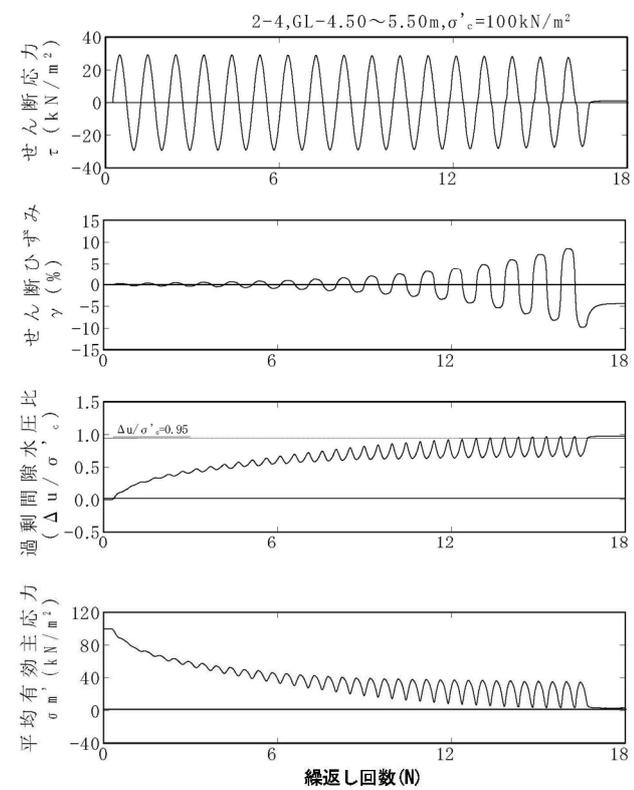
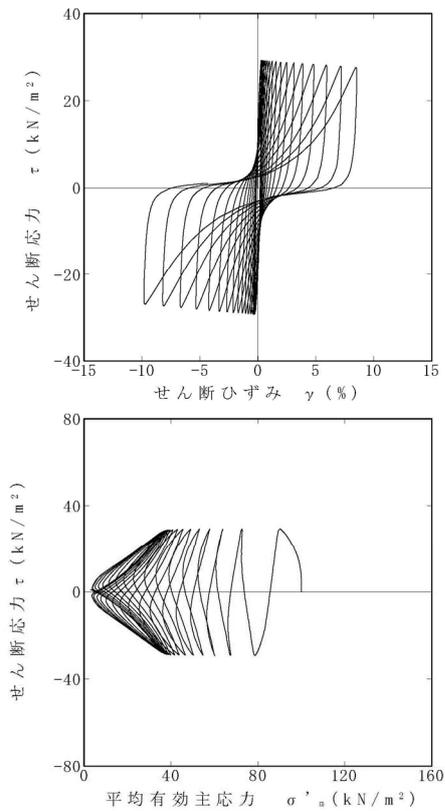


図 1-2-4 A-1 (埋戻土層) ( $\sigma'_c=100\text{kN/m}^2$ ,  $\tau_d / \sigma'_c=0.29$ )

【A-1 (洪積砂層 I)】

試料番号		#1-1-1				#1-1-2				
深度 G.L.- (m)		8.00~9.00				10.00~11.00				
土質材料		洪積砂層 I				洪積砂層 I				
供試体 No.		1	2	3	4	1	2	3	4	
土粒子の密度 $\rho_s$ (g/cm <sup>3</sup> )		2.739				2.732				
圧密圧力 $\sigma'_c$ (kN/m <sup>2</sup> )		100				150				
せん断応力比 $\tau_d/\sigma'_c$		0.47	0.59	0.79	0.97	0.48	0.61	0.44	0.39	
繰返回数	せん断ひずみ 両振幅	$\gamma_{DA}=1.5\%$	4	0.9	0.5	0.3	1.5	0.5	0.9	3
		$\gamma_{DA}=2.0\%$	6.5	2	0.7	0.5	2.5	0.6	1.5	5
		$\gamma_{DA}=3.0\%$	14	6.5	1	0.7	5	0.9	4	8.5
		$\gamma_{DA}=7.5\%$	48	32	14	9	18	7.5	17	25
		$\gamma_{DA}=15\%$	102	96	—	41	53	23	41	48
		間隙水圧比 95% $N_{U95}$	40	31	18	19	21	15	22	25

     : 最大過剰間隙水圧比が 1.0 に近づく (0.95 を越えるもの)

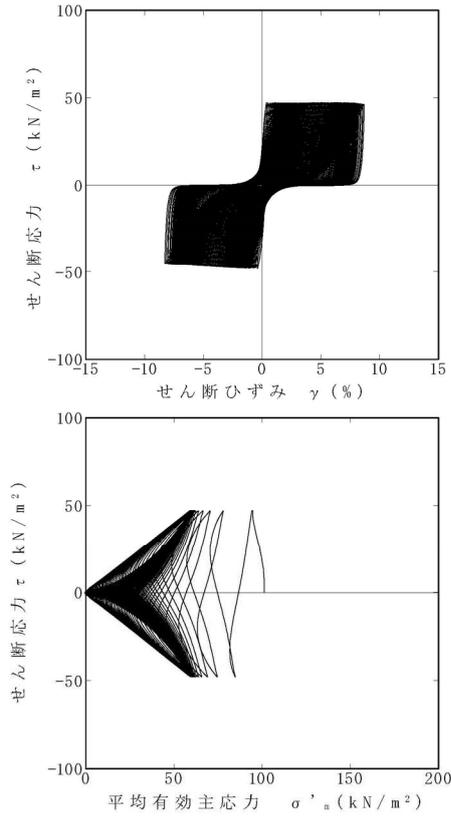


図 1-3-1 A-1 (洪積砂層 I) ( $\sigma'_c=100\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.47$ )

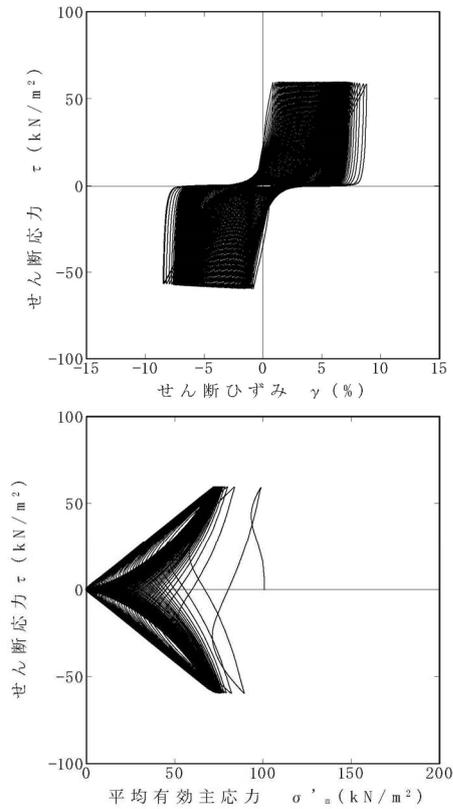
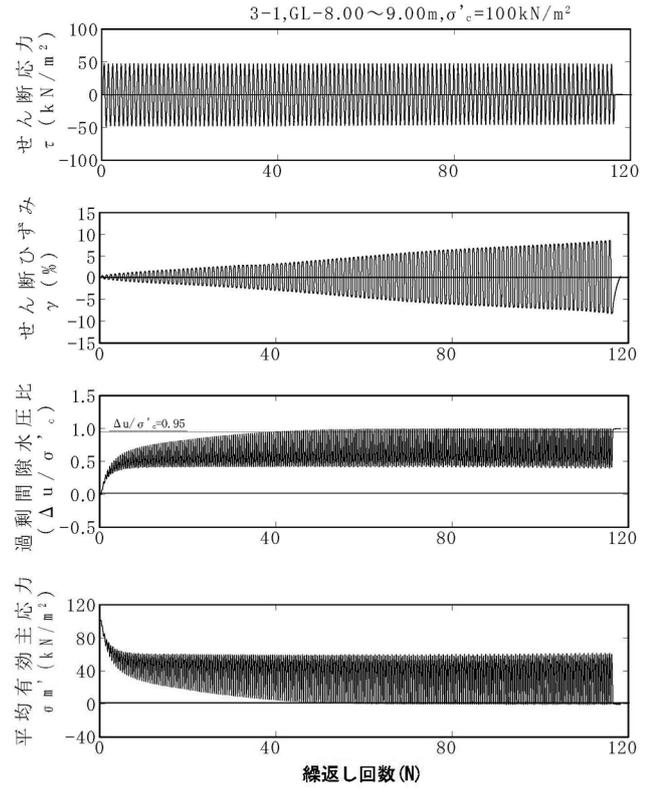
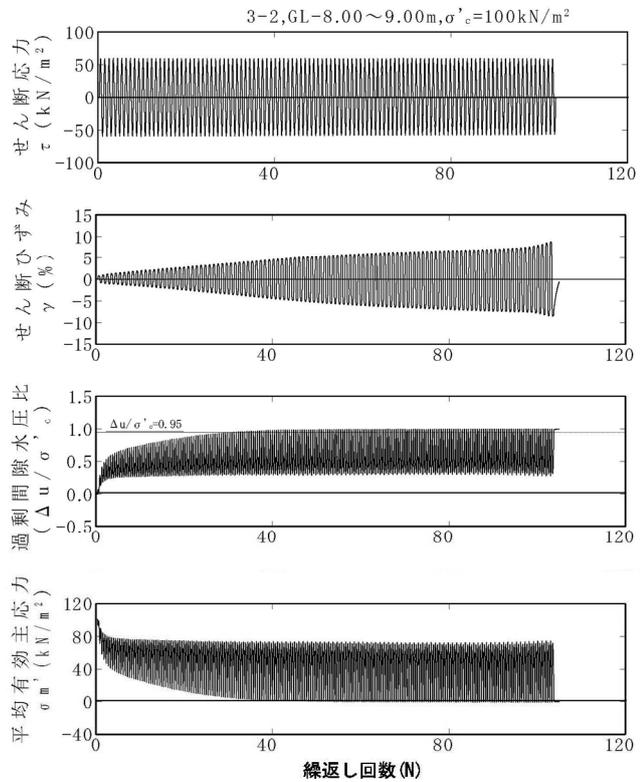


図 1-3-2 A-1 (洪積砂層 I) ( $\sigma'_c=100\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.59$ )



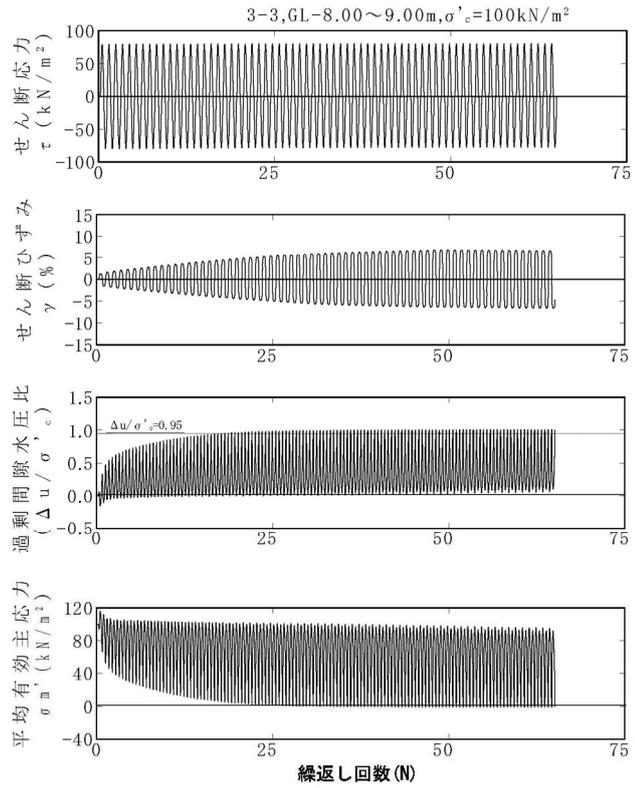
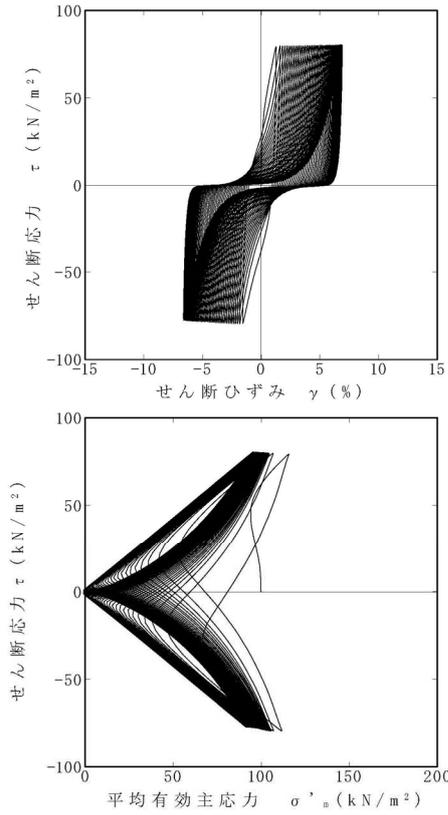


図 1-3-3 A-1 (洪積砂層 I) ( $\sigma'_e=100\text{kN/m}^2$ ,  $\tau_d/\sigma'_e=0.79$ )

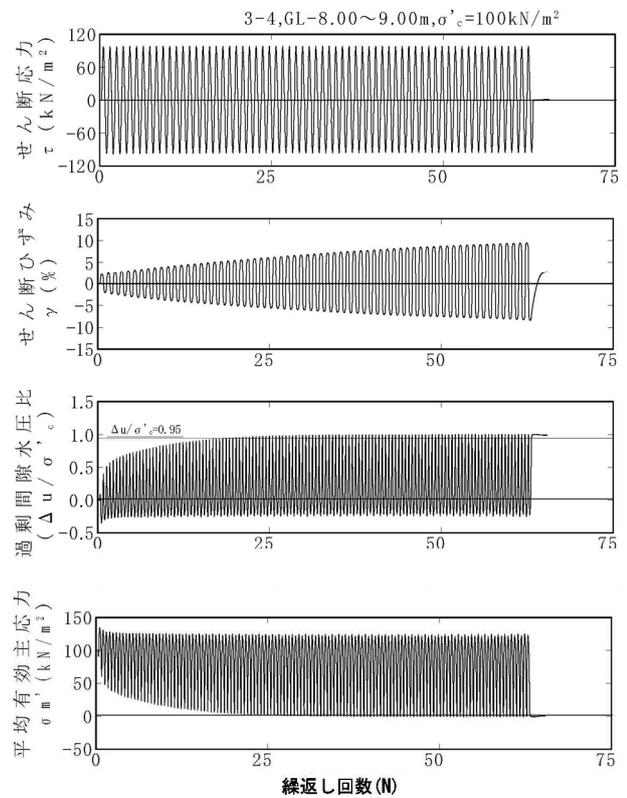
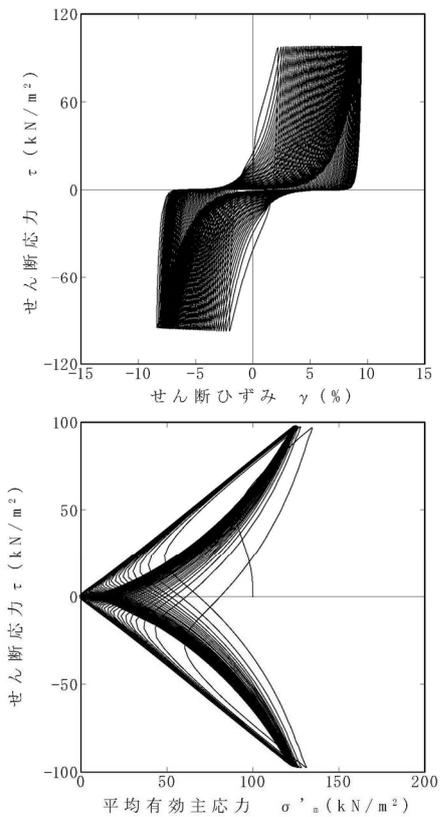


図 1-3-4 A-1 (洪積砂層 I) ( $\sigma'_e=100\text{kN/m}^2$ ,  $\tau_d/\sigma'_e=0.97$ )

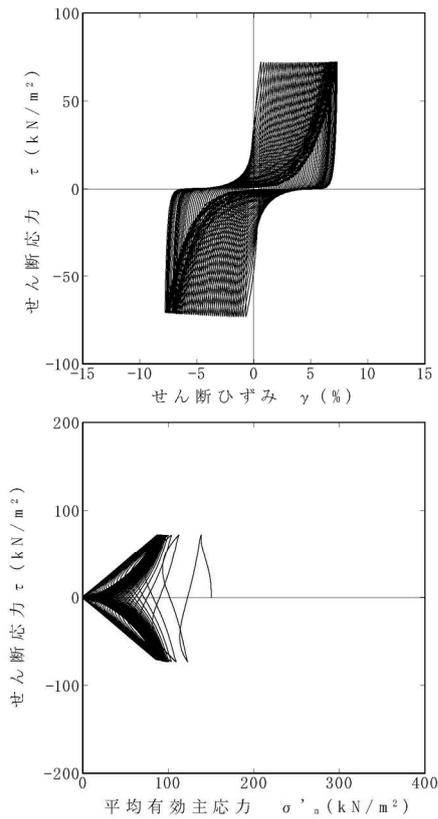


図 1-4-1 A-1 (洪積砂層 I) ( $\sigma'_c=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.48$ )

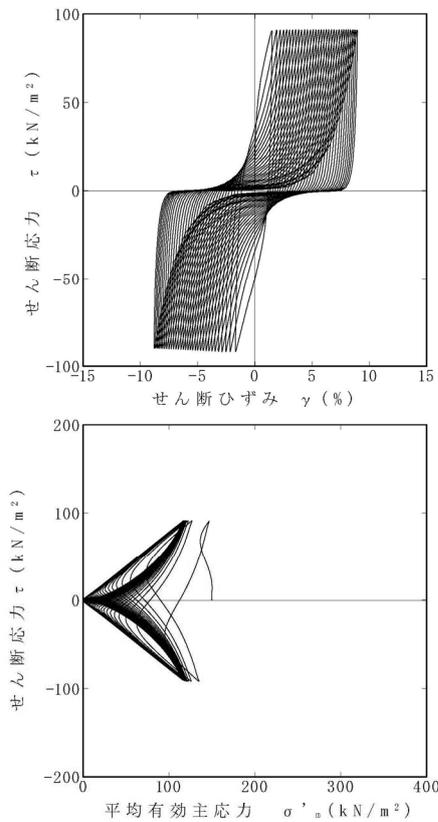
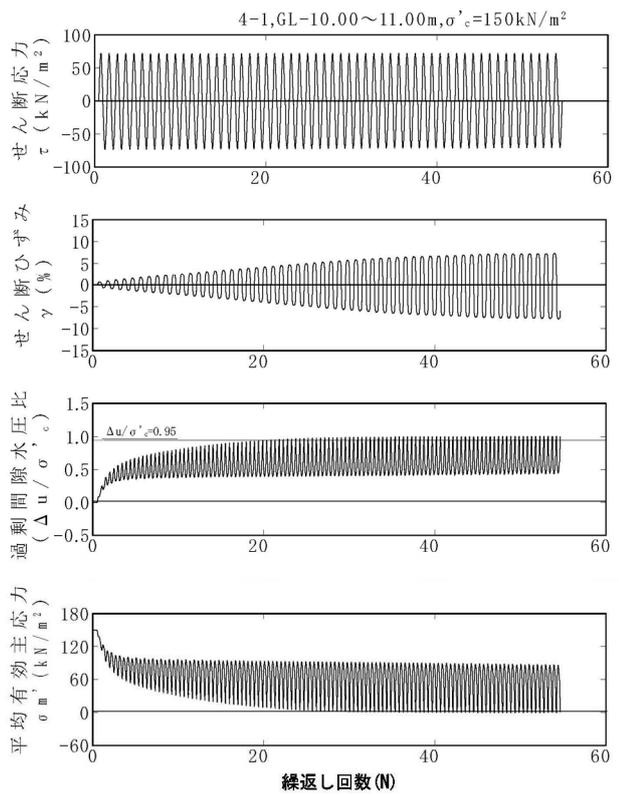
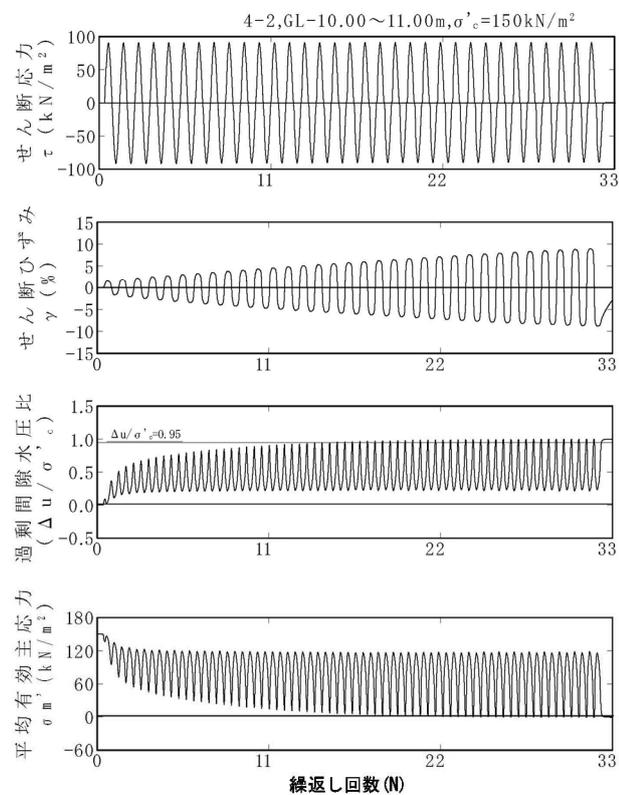


図 1-4-2 A-1 (洪積砂層 I) ( $\sigma'_c=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.61$ )



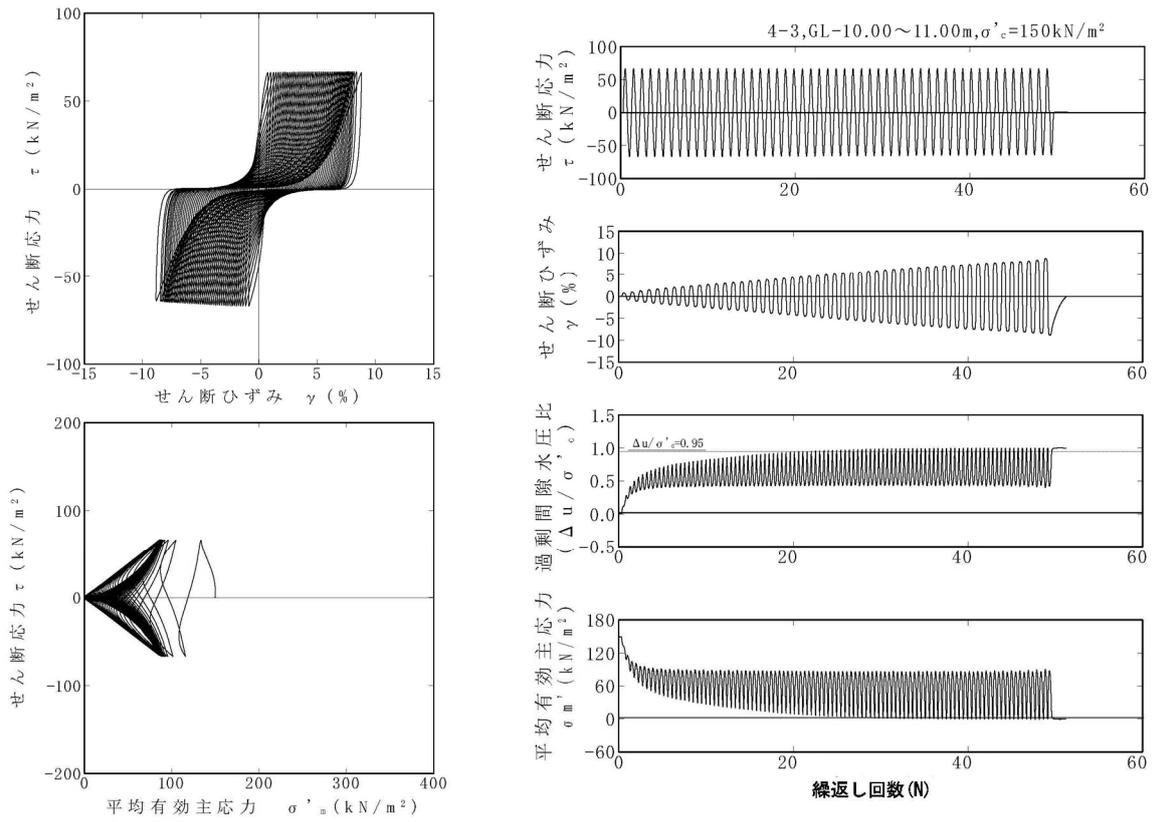


図 1-4-3 A-1 (洪積砂層 I) ( $\sigma'_c=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.44$ )

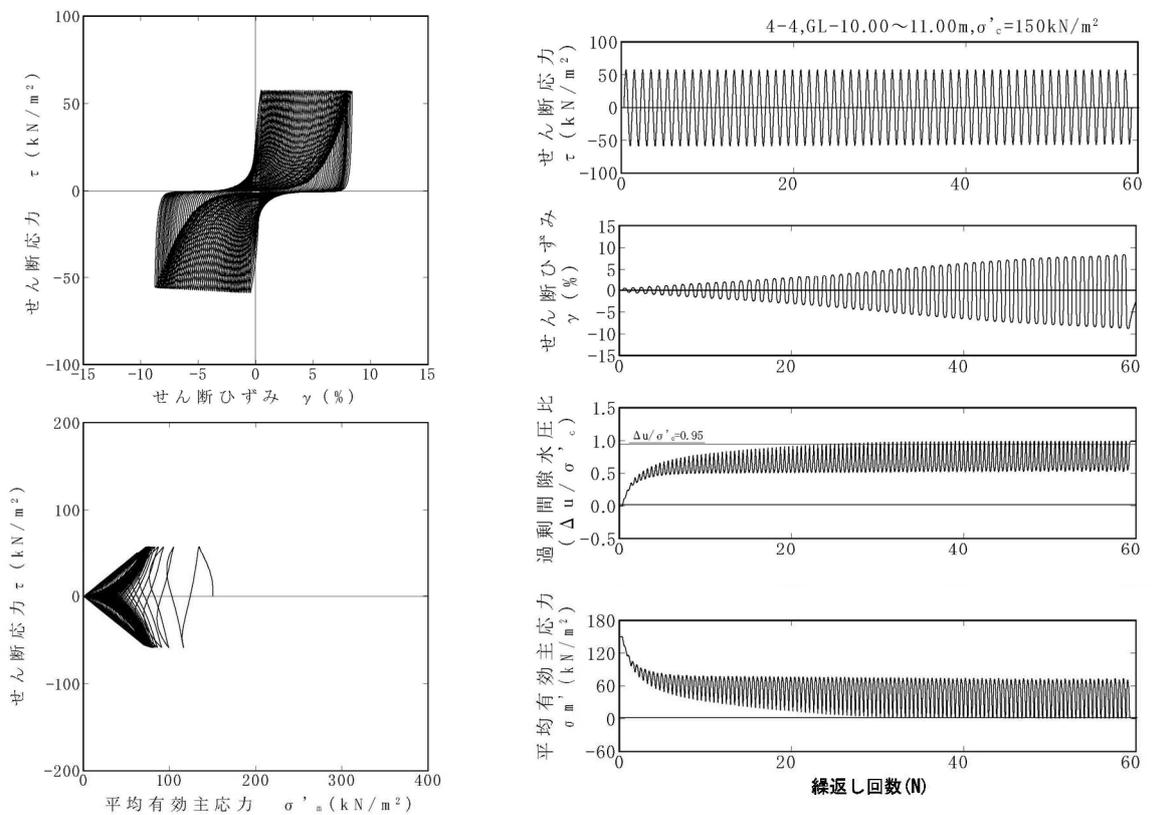


図 1-4-4 A-1 (洪積砂層 I) ( $\sigma'_c=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.39$ )

【A-1 (洪積砂層Ⅱ)】

試料番号		#1-2-1				#1-2-2				#1-2-3				#1-2-4				
深度 G.L.- (m)		13.00~14.00				15.00~16.00				17.00~18.00				20.00~21.00				
土質材料		洪積砂層Ⅱ				洪積砂層Ⅱ				洪積砂層Ⅱ				洪積砂層Ⅱ				
供試体 No.		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
土粒子の密度 $\rho_s$ (g/cm <sup>3</sup> )		2.714				2.688				2.684				2.685				
圧密圧力 $\sigma_c'$ (kN/m <sup>2</sup> )		150				150				200				200				
せん断応力比 $\tau_d/\sigma_c'$		0.51	0.41	0.46	0.36	0.39	0.45	0.50	0.64	0.40	0.35	0.48	0.38	0.40	0.46	0.50	0.62	
繰返回数	せん断ひずみ 両振幅	$\gamma_{DA}=1.5\%$	0.4	0.8	1	10	2	1.5	0.8	0.5	2	4.5	0.6	7	2	0.9	0.8	0.6
		$\gamma_{DA}=2.0\%$	0.6	1	2	11	2.5	3.5	1	0.7	3.5	7.5	0.8	12	3.5	1.5	1.5	0.7
		$\gamma_{DA}=3.0\%$	0.9	4	2.5	20	6	7	4	1	6.5	14	2	20	7	4.5	5	1.5
		$\gamma_{DA}=7.5\%$	7	30	17	65	26	20	18	7	15	30	7	39	27	16	19	9
		$\gamma_{DA}=15\%$	16	56	32	102	48	37	33	13	22	43	13	56	52	25	31	18
	間隙水圧比 95% $N_{U95}$		16	40	22	61	31	27	24	14	19	33	13	42	31	22	30	-

     : 最大過剰間隙水圧比が 1.0 に近づく (0.95 を越えるもの)

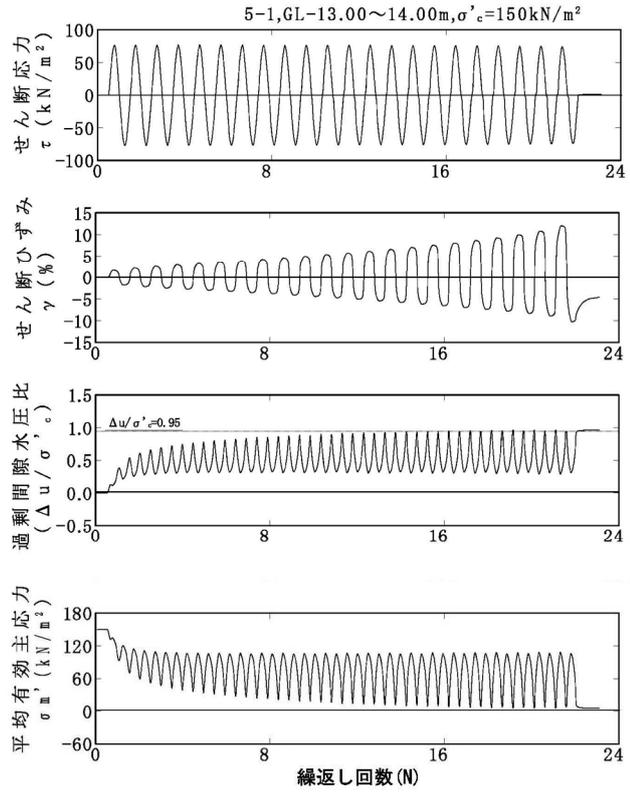
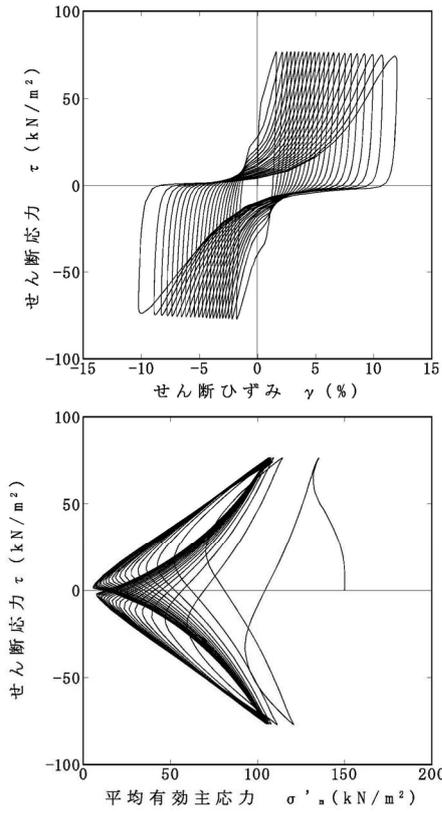


図 1-5-1 A-1 (洪積砂層Ⅱ) ( $\sigma'_{e}=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_{e}=0.51$ )

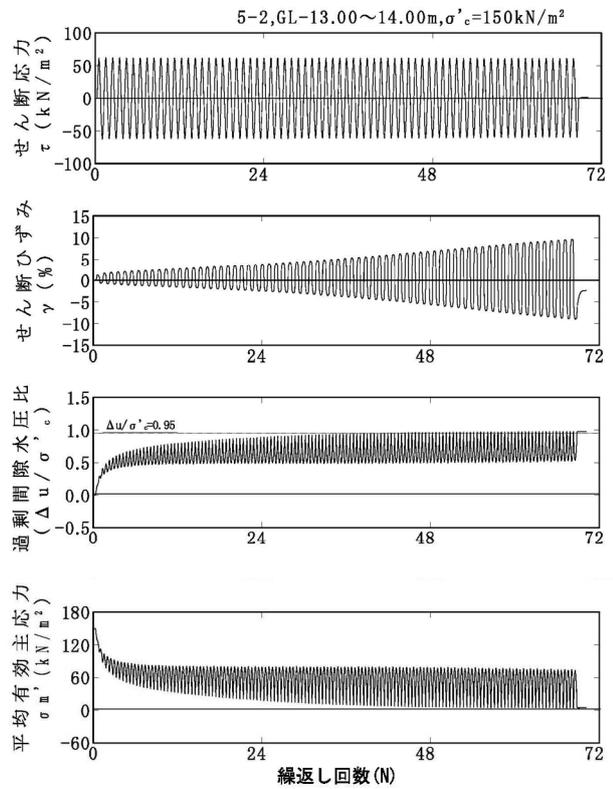
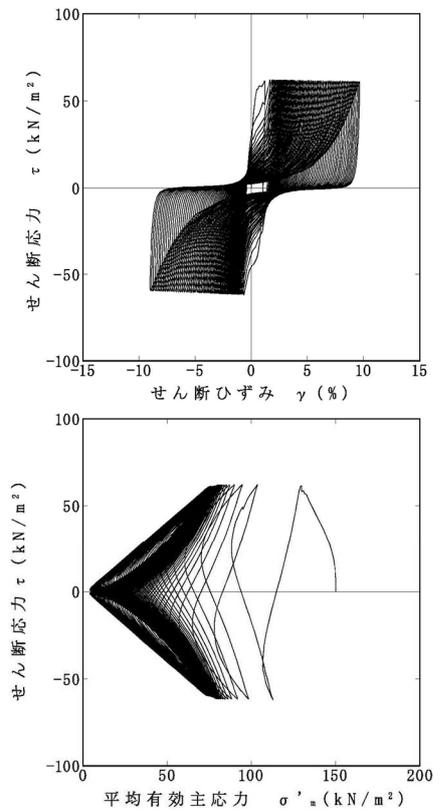


図 1-5-2 A-1 (洪積砂層Ⅱ) ( $\sigma'_{e}=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_{e}=0.41$ )

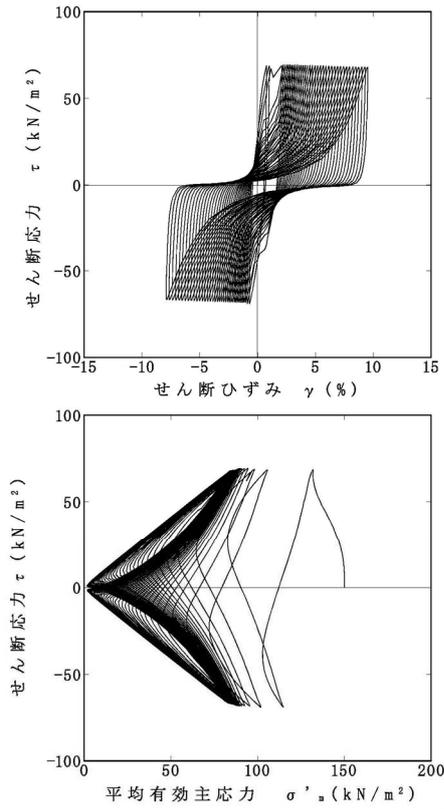


図 1-5-3 A-1 (洪積砂層 II) ( $\sigma'_c=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.46$ )

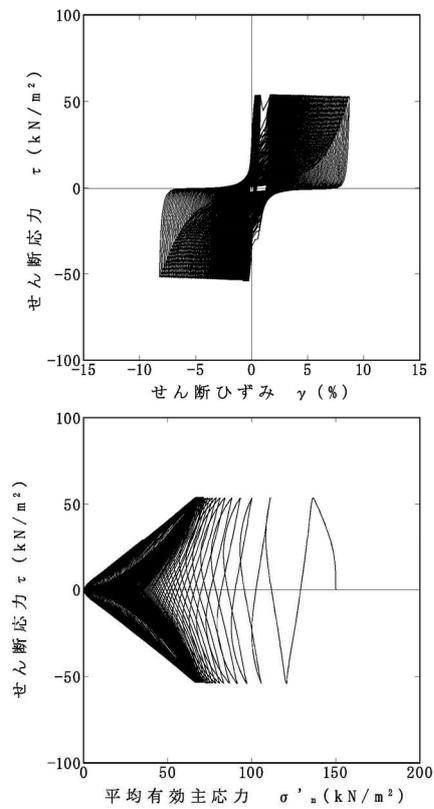
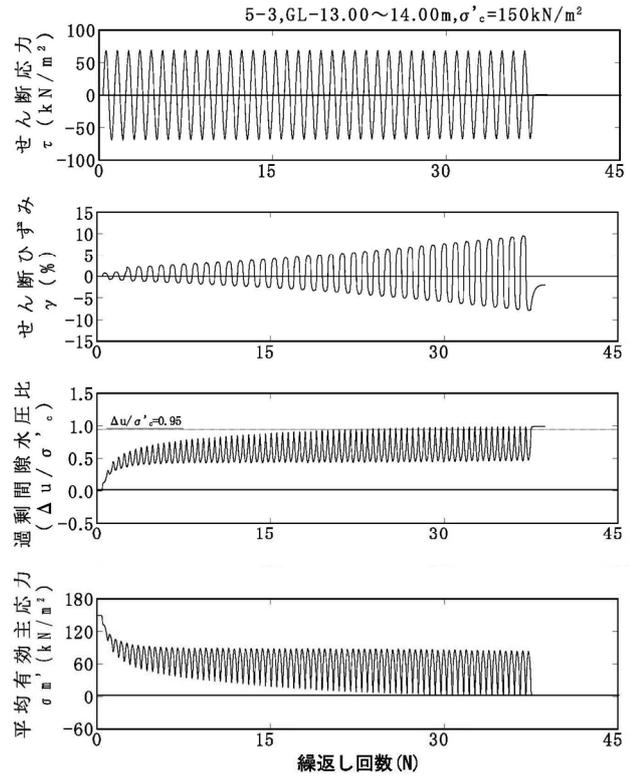
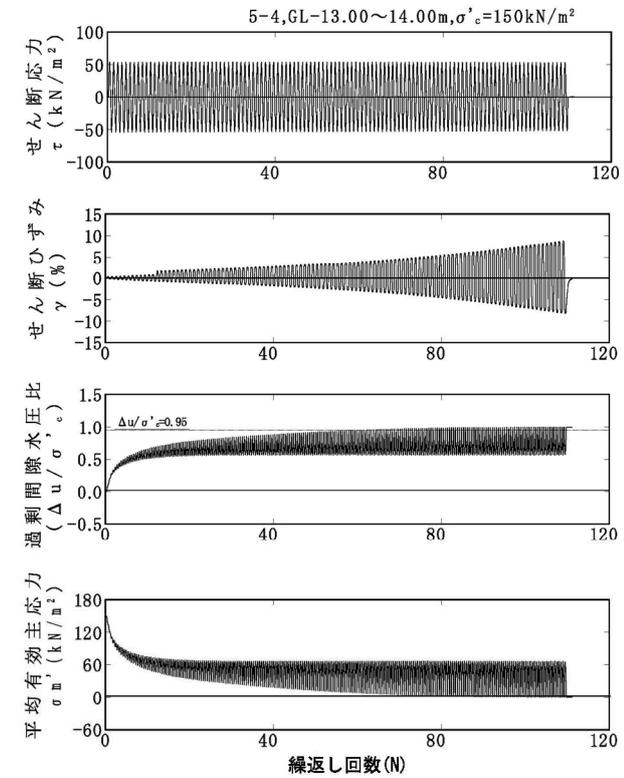


図 1-5-4 A-1 (洪積砂層 II) ( $\sigma'_c=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.36$ )



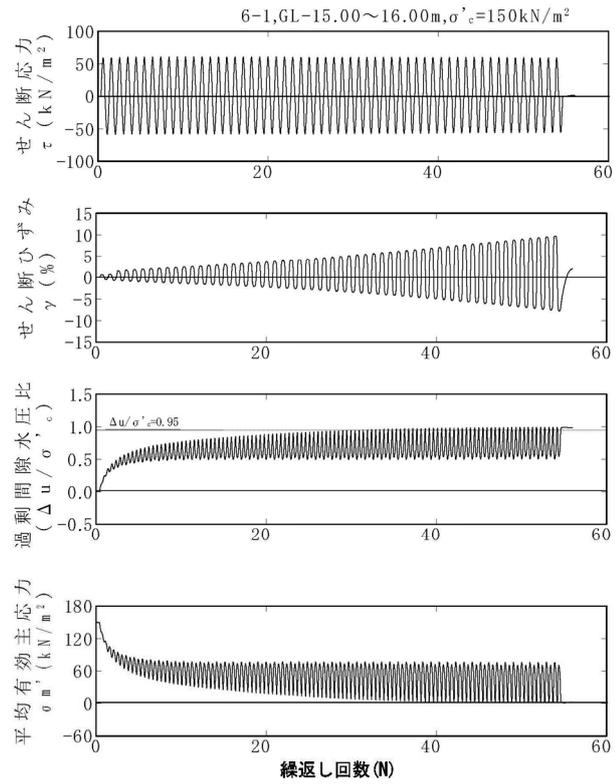
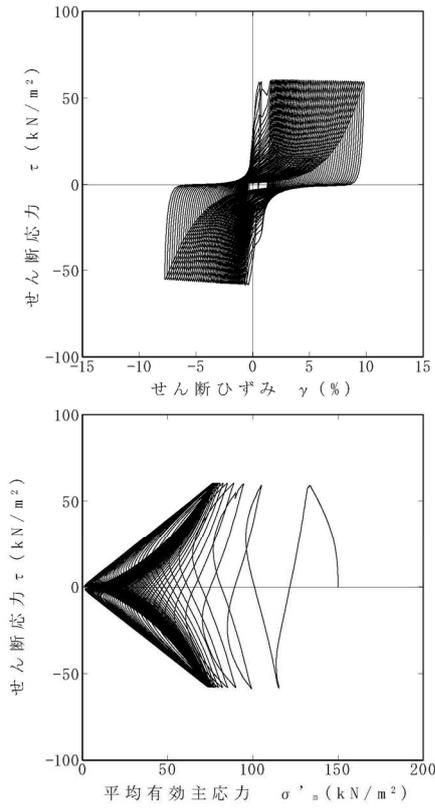


図 1-6-1 A-1 (洪積砂層Ⅱ) ( $\sigma'_{e}=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_{e}=0.39$ )

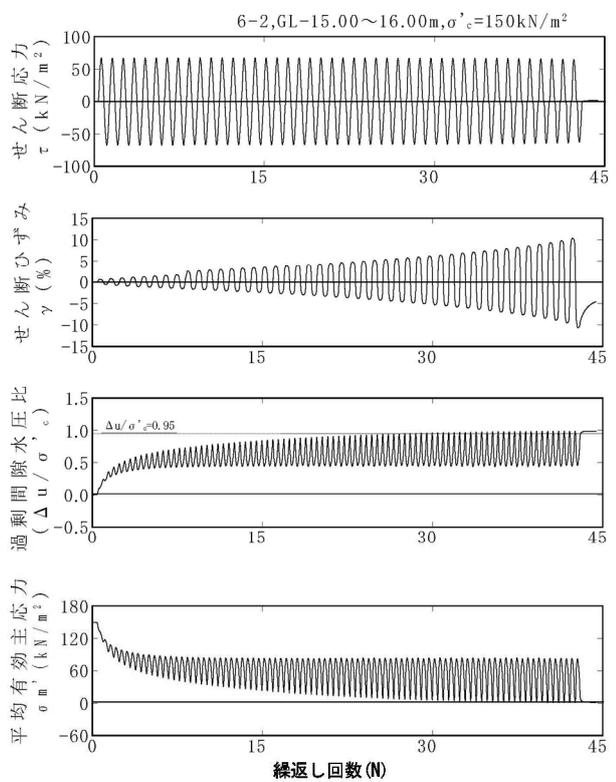
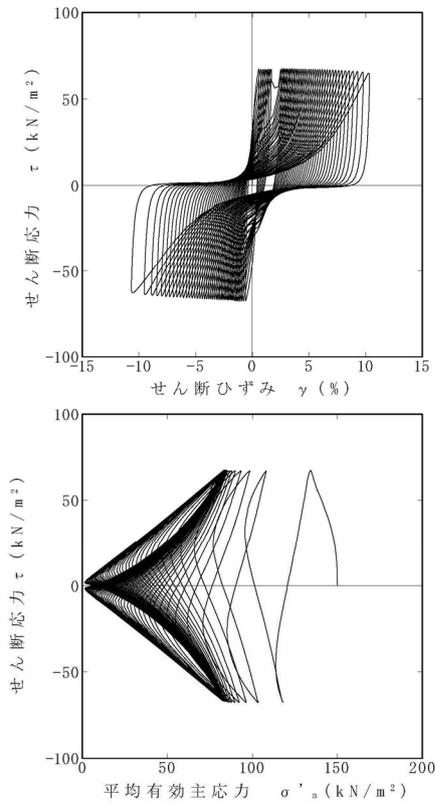


図 1-6-2 A-1 (洪積砂層Ⅱ) ( $\sigma'_{e}=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_{e}=0.45$ )

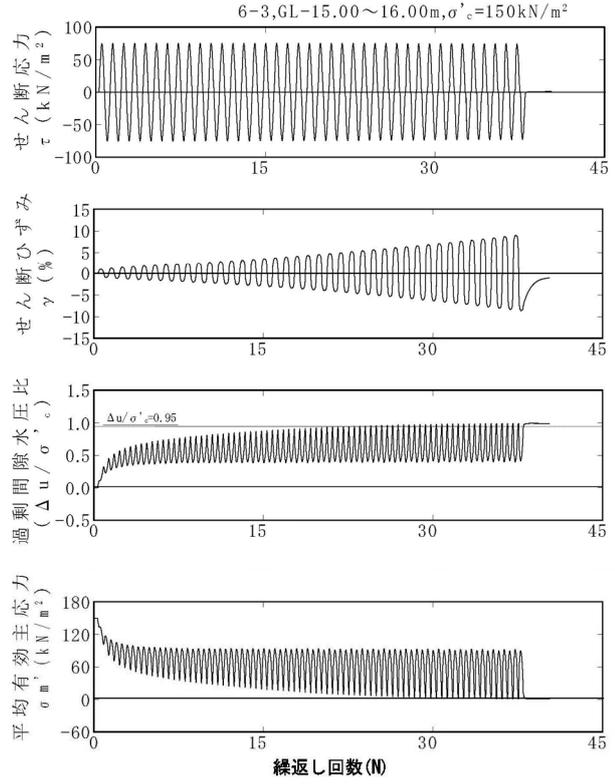
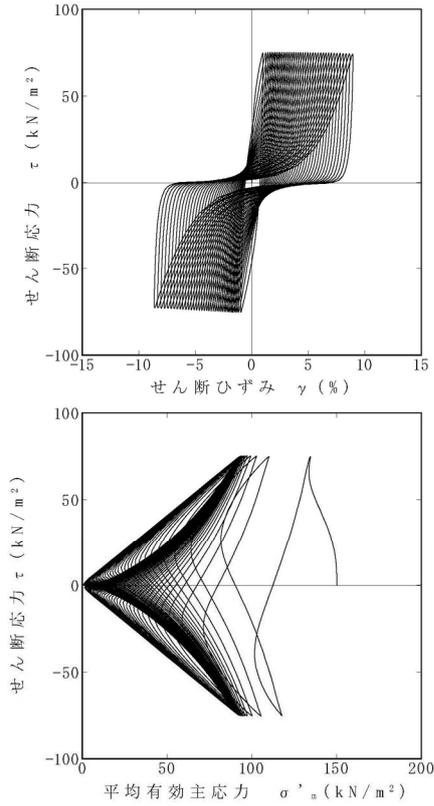


図 1-6-3 A-1 (洪積砂層Ⅱ) ( $\sigma'_e=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_e=0.50$ )

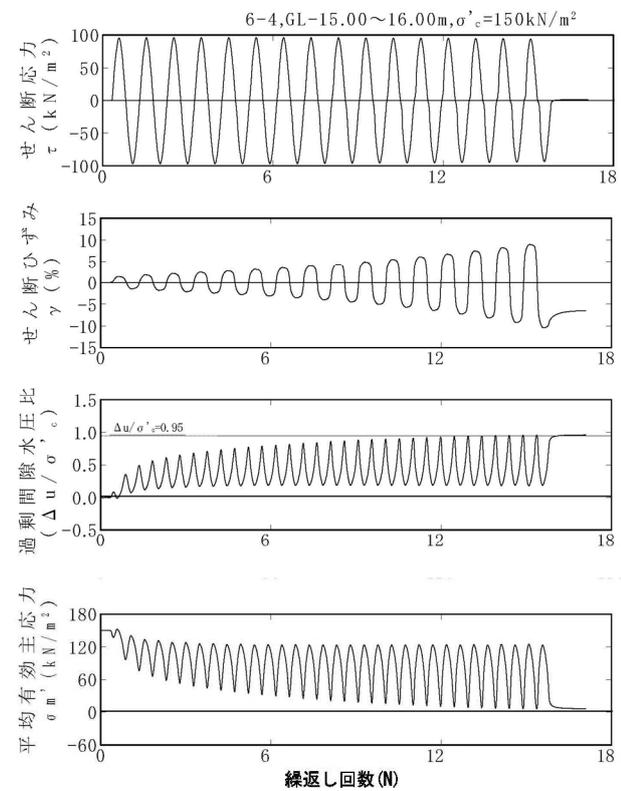
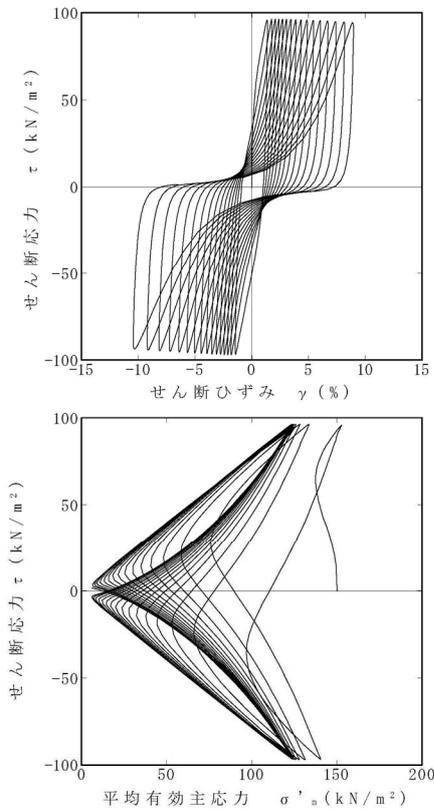


図 1-6-4 A-1 (洪積砂層Ⅱ) ( $\sigma'_e=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_e=0.64$ )

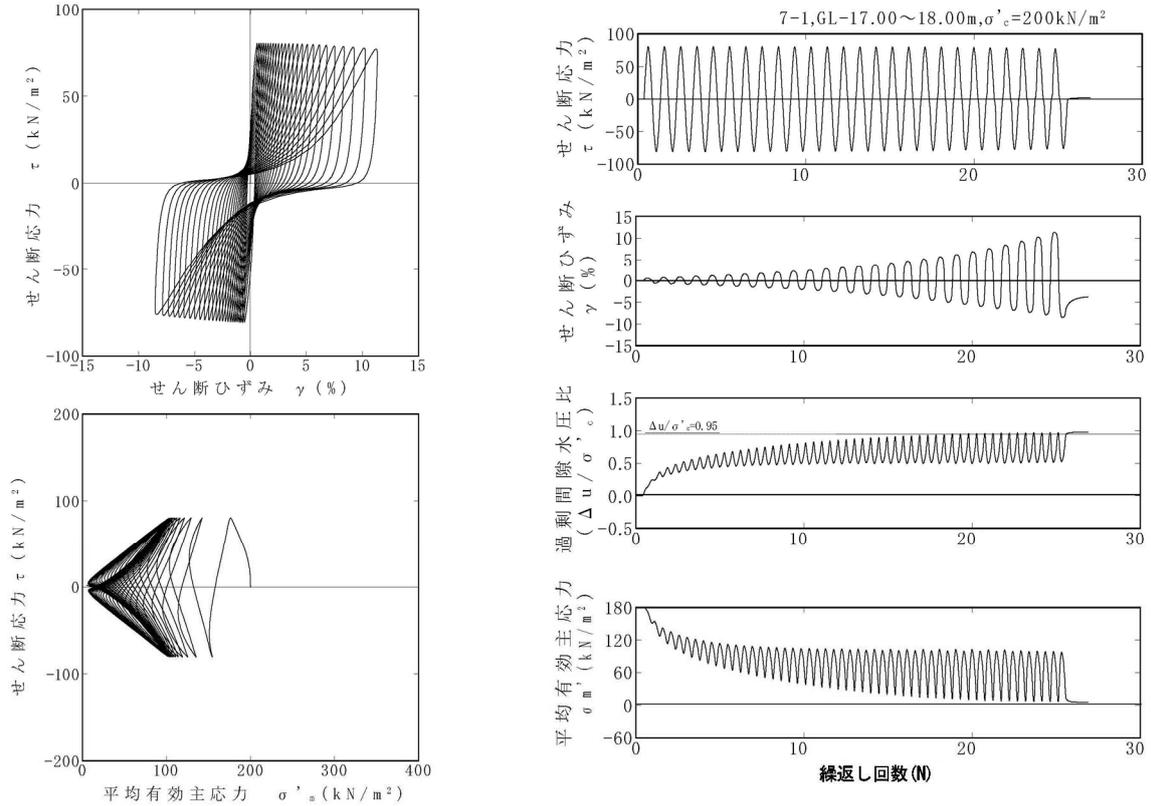


図 1-7-1 A-1 (洪積砂層Ⅱ) ( $\sigma'_c=200\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.40$ )

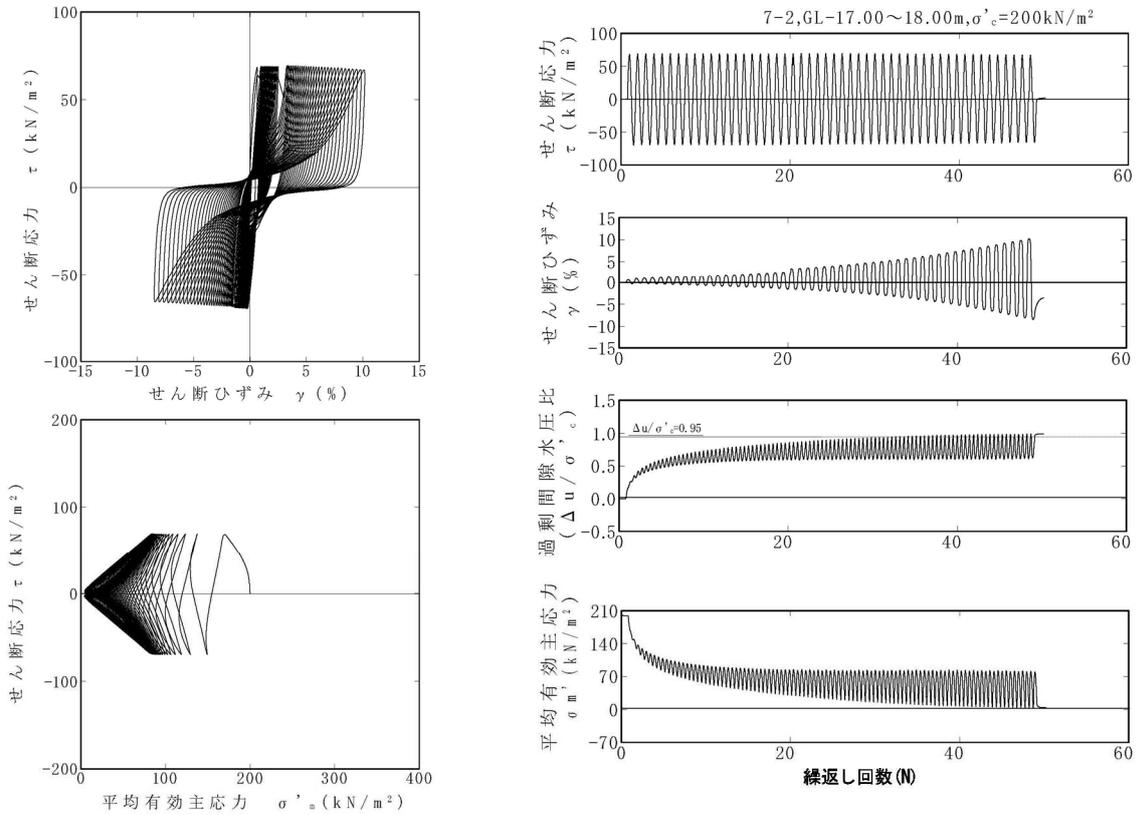


図 1-7-2 A-1 (洪積砂層Ⅱ) ( $\sigma'_c=200\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.35$ )

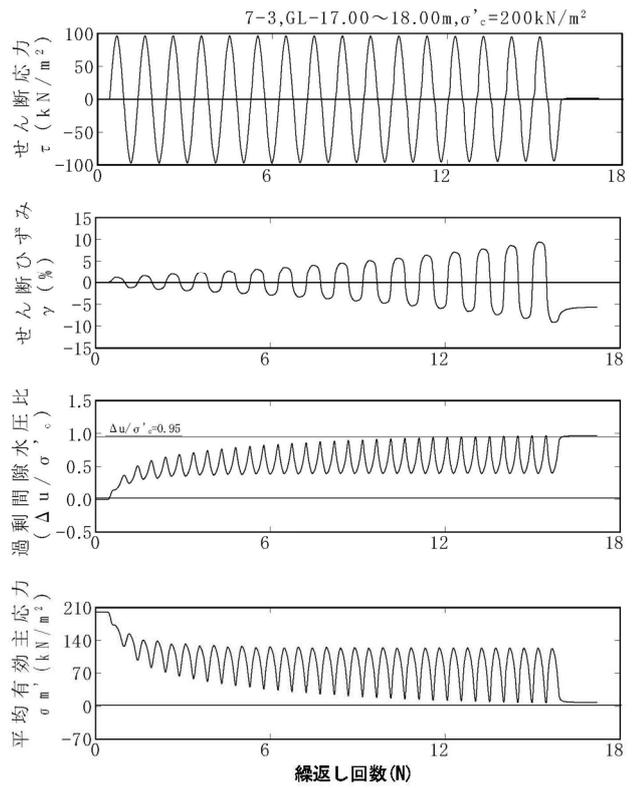
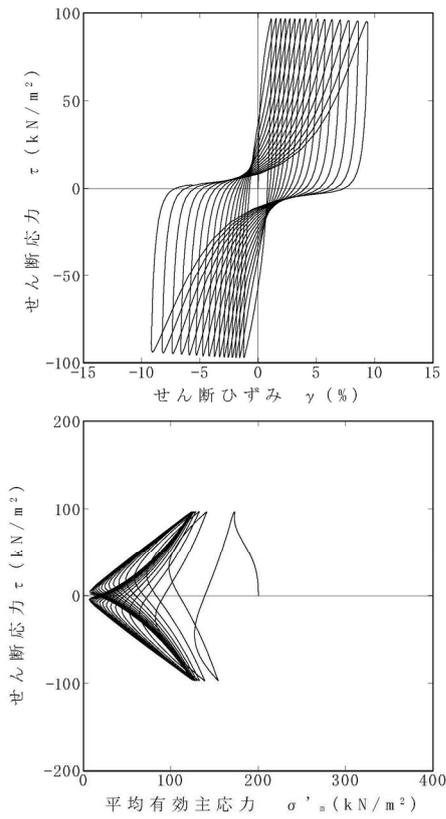


図 1-7-3 A-1 (洪積砂層Ⅱ) ( $\sigma'_e=200\text{kN/m}^2$ ,  $\tau_d / \sigma'_e=0.48$ )

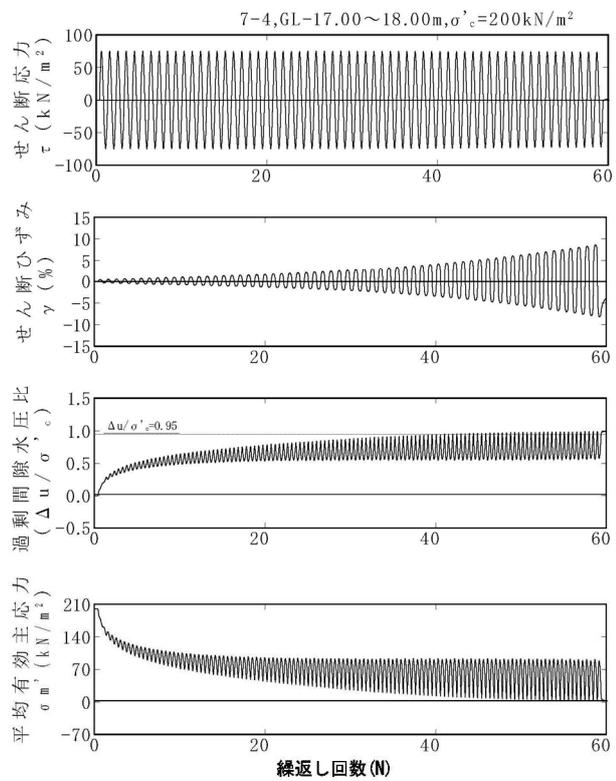
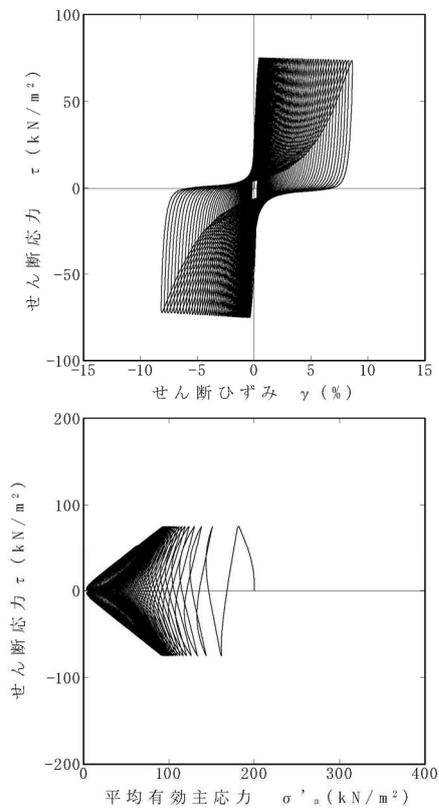


図 1-7-4 A-1 (洪積砂層Ⅱ) ( $\sigma'_e=200\text{kN/m}^2$ ,  $\tau_d / \sigma'_e=0.38$ )

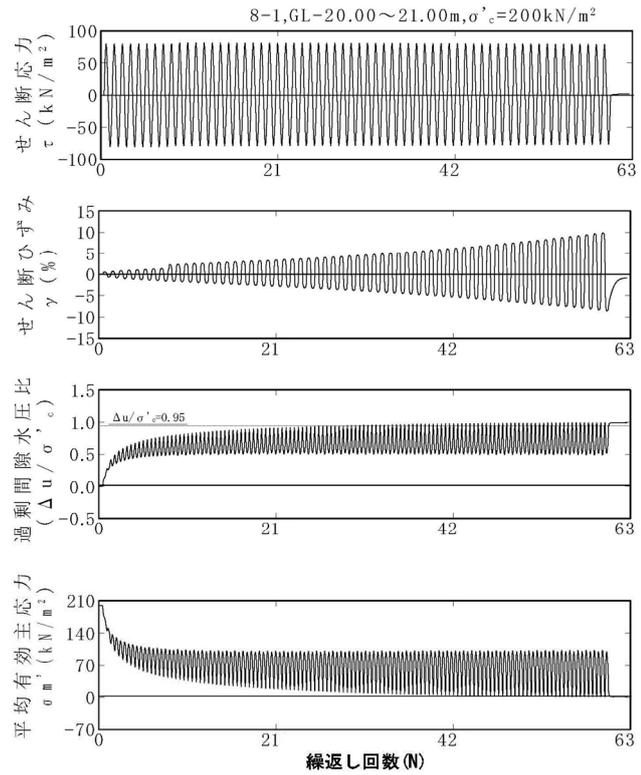
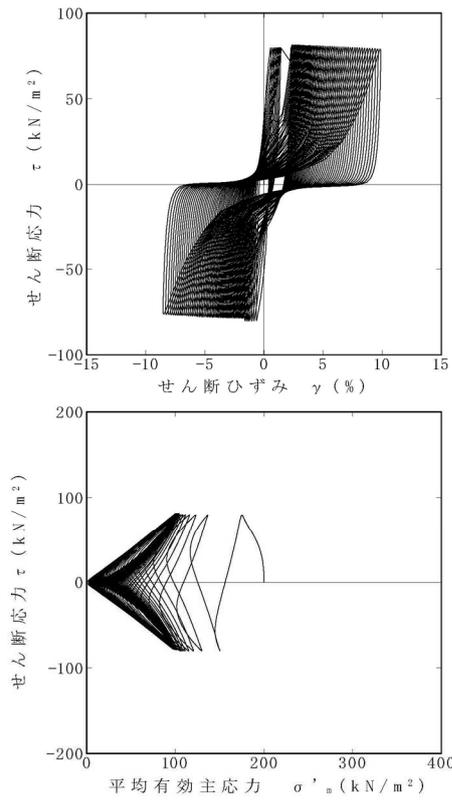


図 1-8-1 A-1 (洪積砂層 II) ( $\sigma'_e=200\text{kN/m}^2$ ,  $\tau_d/\sigma'_e=0.40$ )

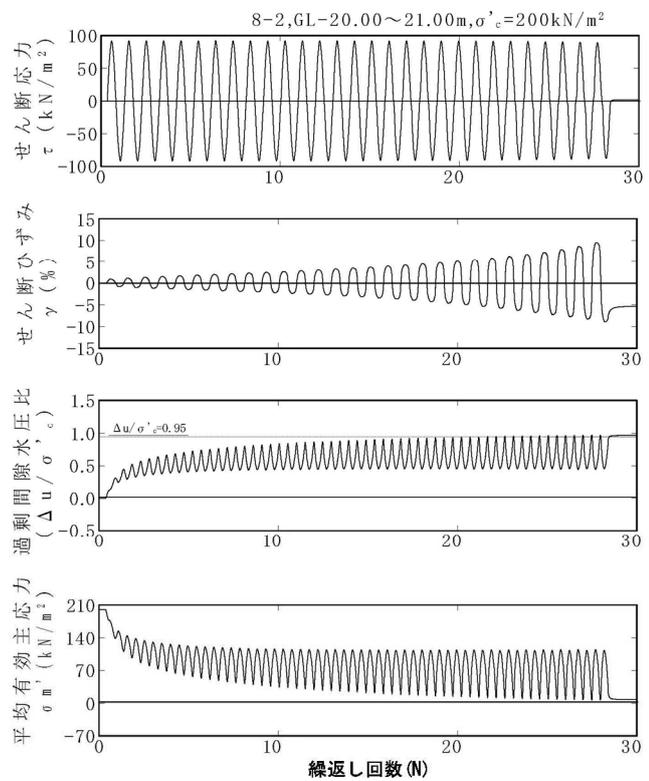
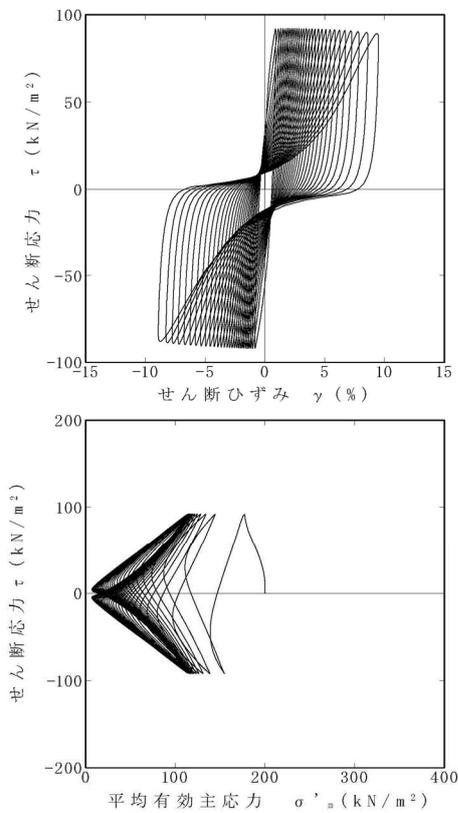


図 1-8-2 A-1 (洪積砂層 II) ( $\sigma'_e=200\text{kN/m}^2$ ,  $\tau_d/\sigma'_e=0.46$ )

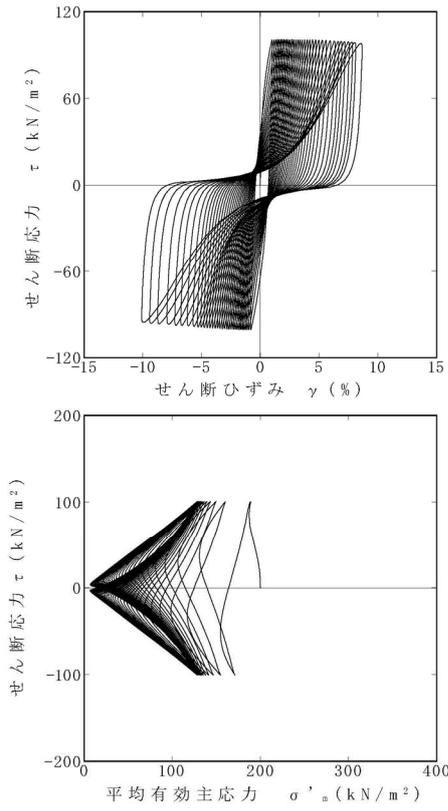


図 1-8-3 A-1 (洪積砂層Ⅱ) ( $\sigma'_c=200\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.50$ )

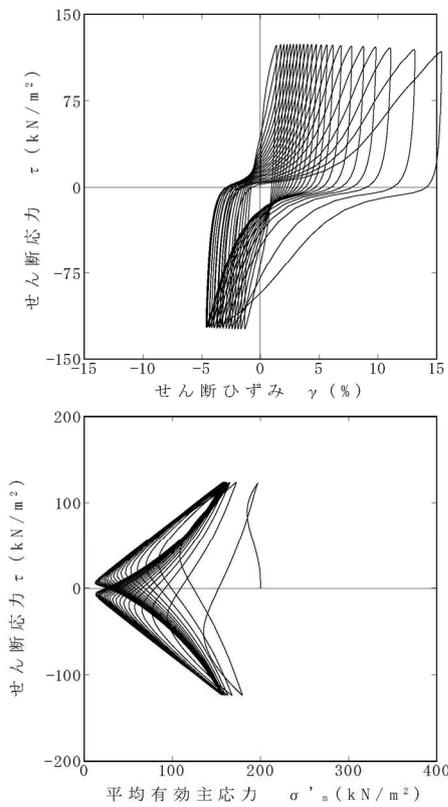
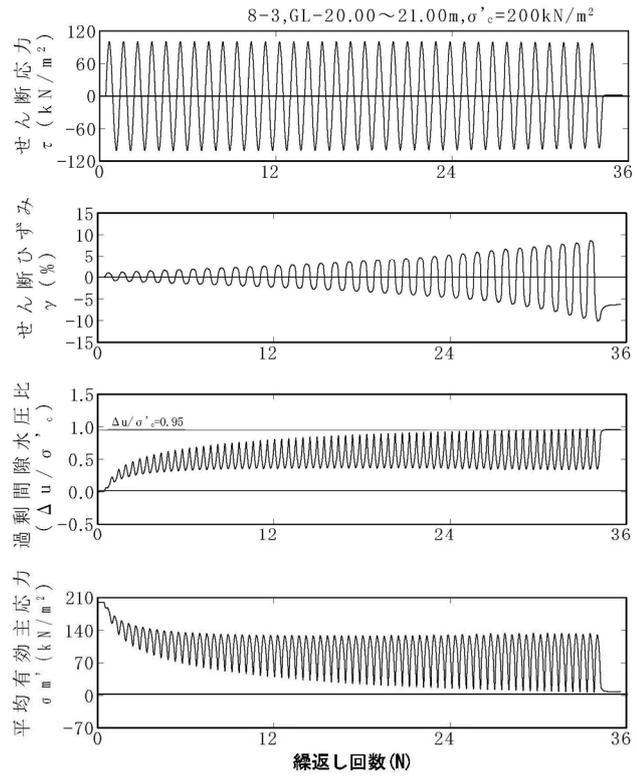
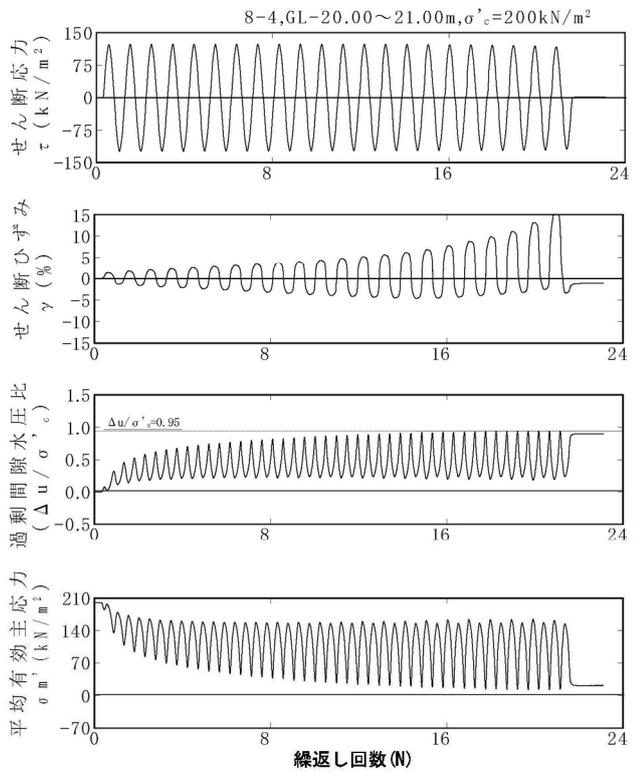


図 1-8-4 A-1 (洪積砂層Ⅱ) ( $\sigma'_c=200\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.62$ )



【A-2 (洪積砂層 I)】

試料番号		#4-1-1				#4-1-2				#4-1-3				
深度 G.L.- (m)		13.20~14.14				13.36~13.99				13.21~13.85				
土質材料		洪積砂層 I				洪積砂層 I				洪積砂層 I				
供試体 No.		1	2	3	4	1	2	3	4	1	2	3	4	
土粒子の密度 $\rho_s$ (g/cm <sup>3</sup> )		2.665				2.656				2.754				
圧密圧力 $\sigma_c'$ (kN/m <sup>2</sup> )		150				150				150				
せん断応力比 $\tau_d/\sigma_c'$		0.60	0.43	0.92	1.18	0.79	1.03	1.20	0.61	1.01	0.71	0.81	0.96	
繰返回数	せん断ひずみ 面振幅	$\gamma_{DA}=1.5\%$	10	5	0.7	0.4	0.9	0.5	0.4	9	0.5	0.9	0.6	0.6
		$\gamma_{DA}=2.0\%$	23	9	1	0.5	3	0.6	0.6	18	0.7	2	0.8	0.9
		$\gamma_{DA}=3.0\%$	44	21	4	0.7	13	0.9	0.9	37	1	8	2	2.5
		$\gamma_{DA}=7.5\%$	60	56	23	5	51	4.5	6.5	91	5	43	17	18
		$\gamma_{DA}=15\%$	71	62	35	-	63	7	9	-	7	-	29	-
	間隙水圧比 95% $N_{u95}$		-	-	-	-	-	-	-	-	-	-	-	-

     : 最大過剰間隙水圧比が 1.0 に近づく (0.95 を越えるもの)

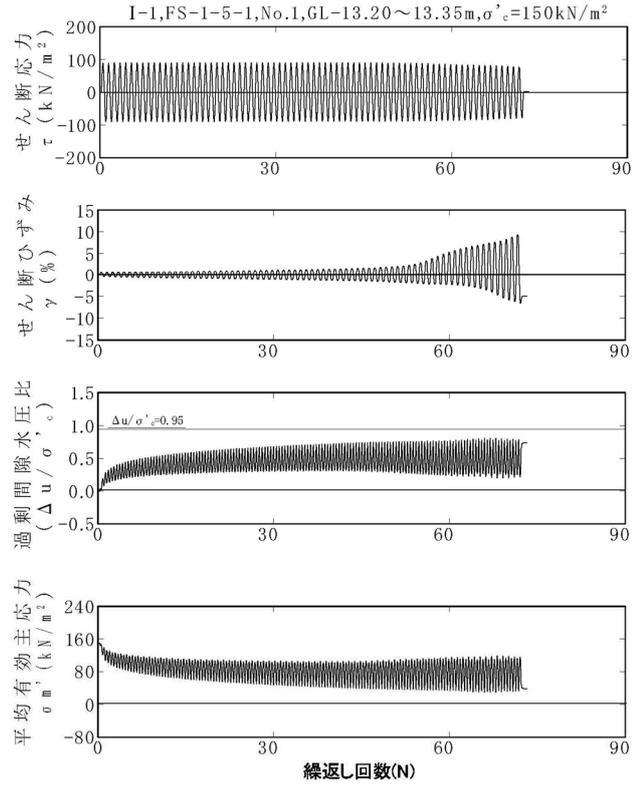
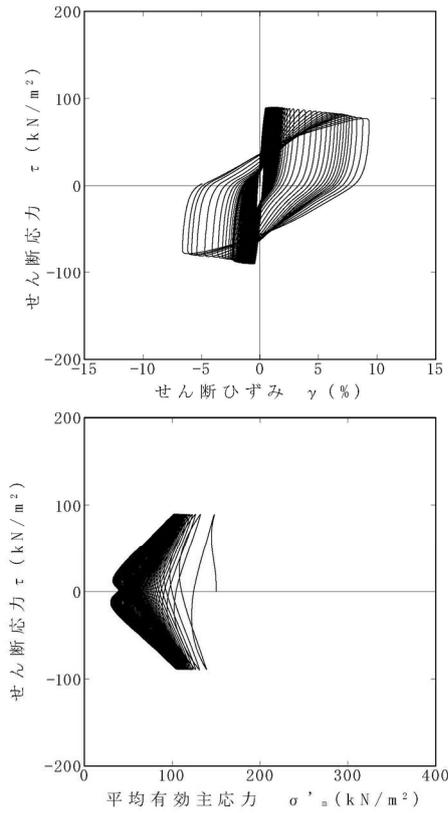


図 4-1-1 A-2 (洪積砂層 I) ( $\sigma'_c=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.60$ )

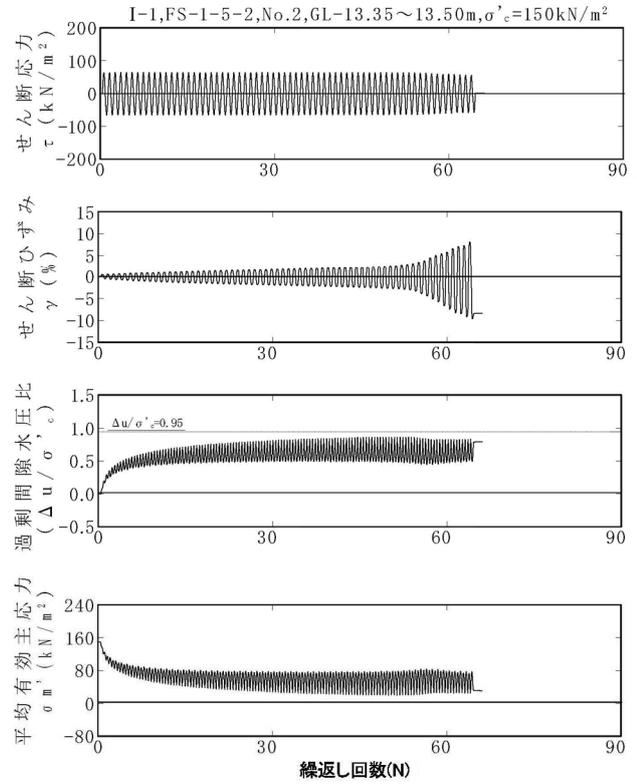
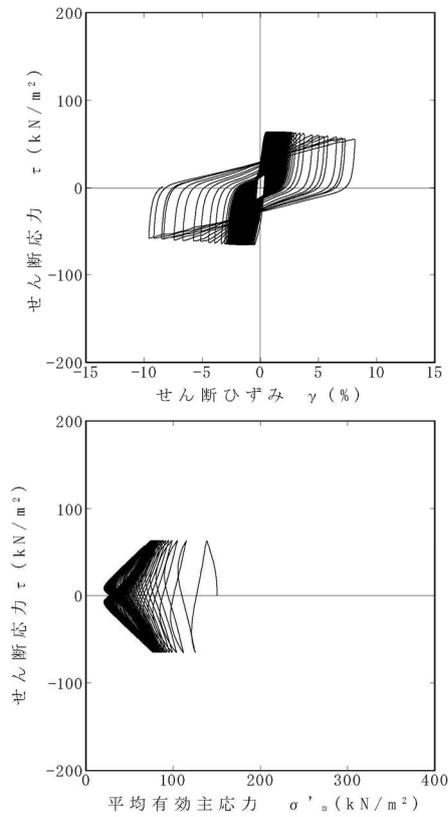


図 4-1-2 A-2 (洪積砂層 I) ( $\sigma'_c=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.43$ )

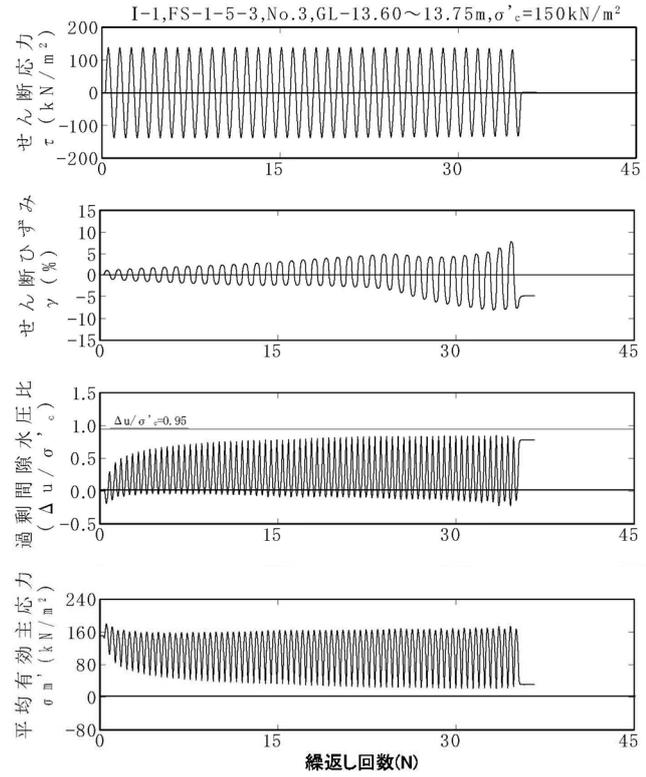
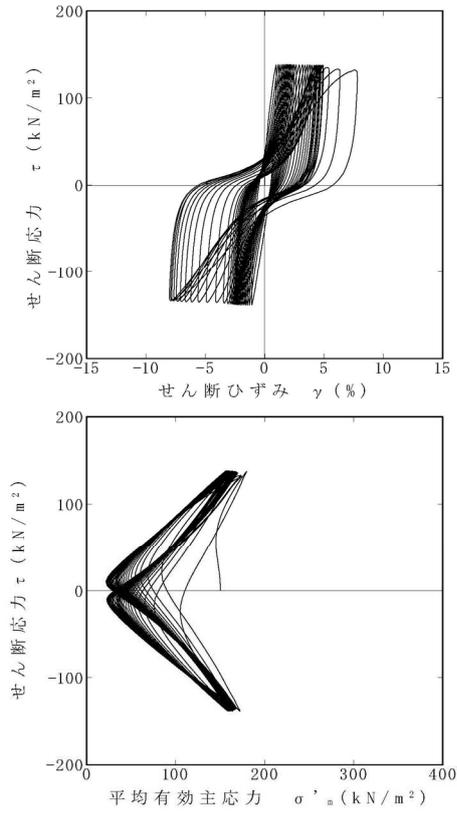


図 4-1-3 A-2 (洪積砂層 I) ( $\sigma'_c=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.92$ )

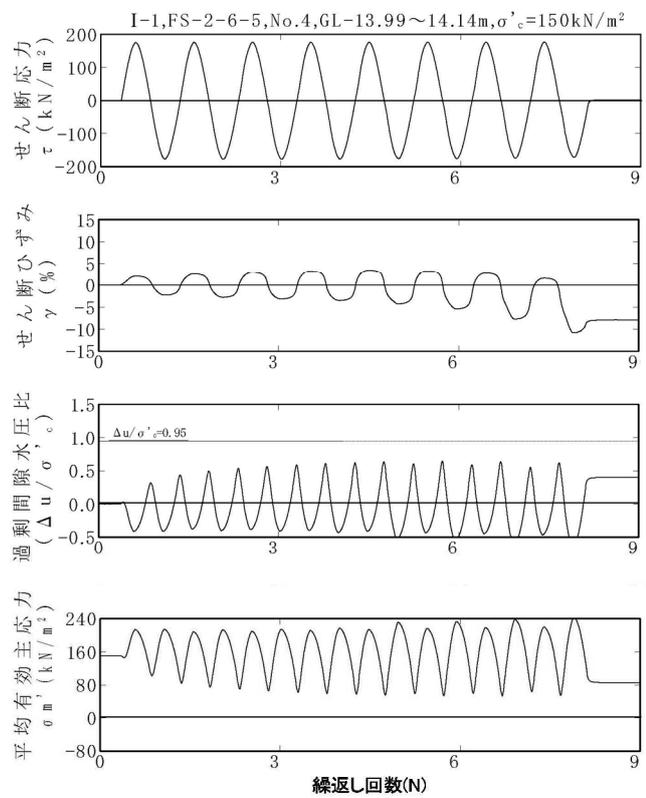
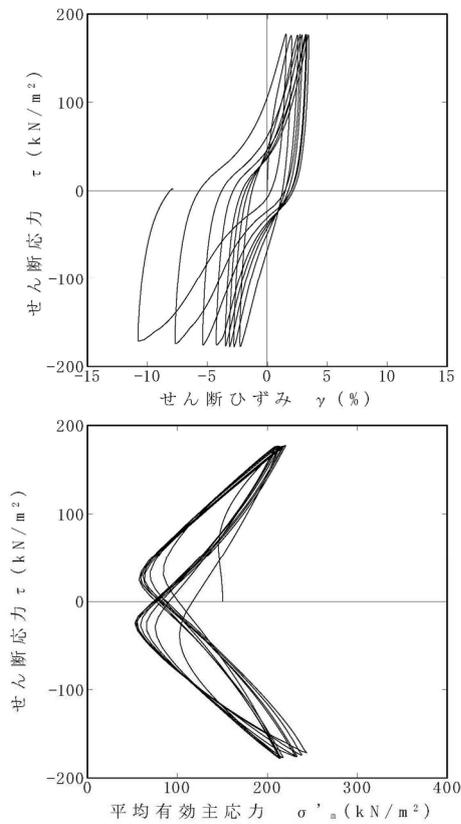


図 4-1-4 A-2 (洪積砂層 I) ( $\sigma'_c=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=1.18$ )

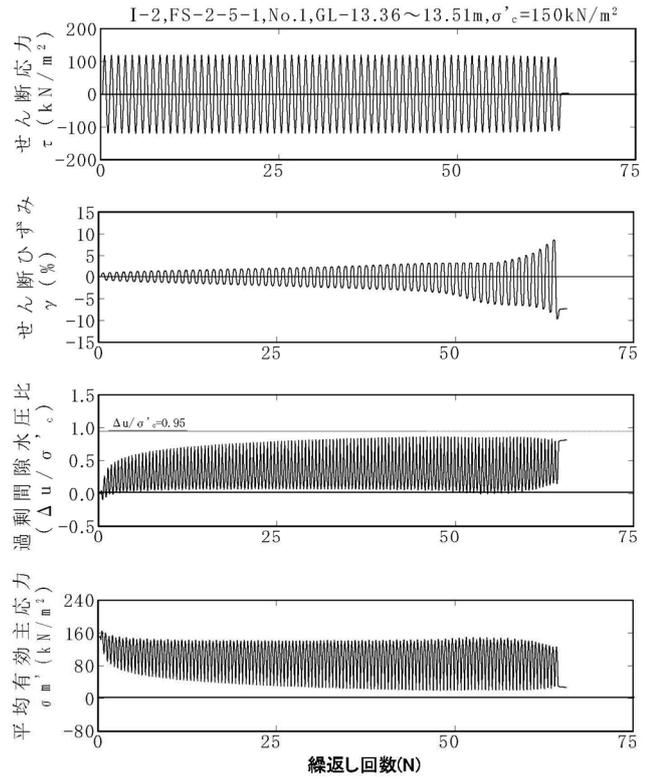
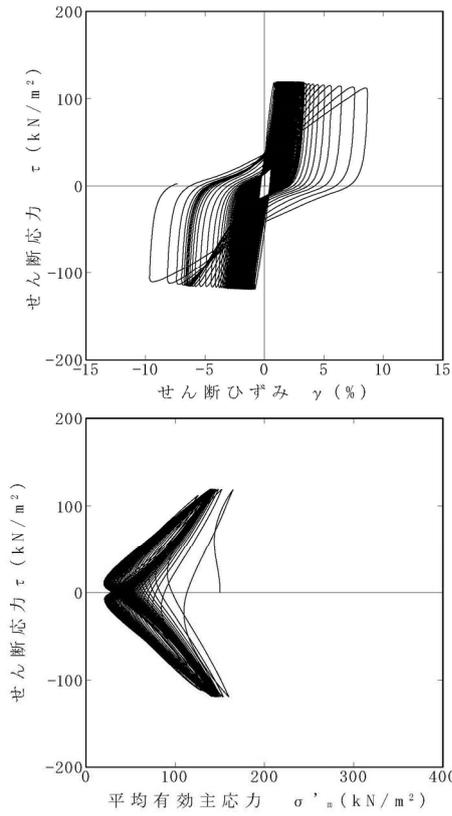


図 4-2-1 A-2 (洪積砂層 I) ( $\sigma'_c=150\text{kN/m}^2$ ,  $\tau_d / \sigma'_c=0.79$ )

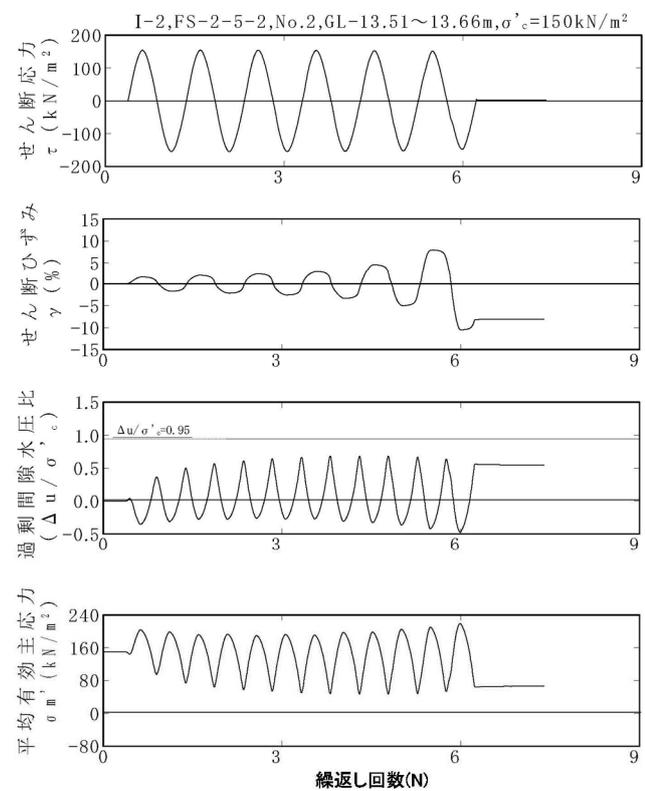
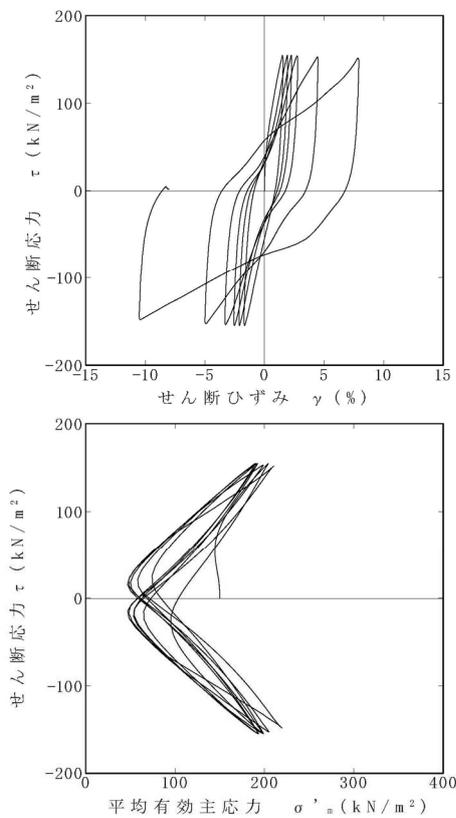


図 4-2-2 A-2 (洪積砂層 I) ( $\sigma'_c=150\text{kN/m}^2$ ,  $\tau_d / \sigma'_c=1.03$ )

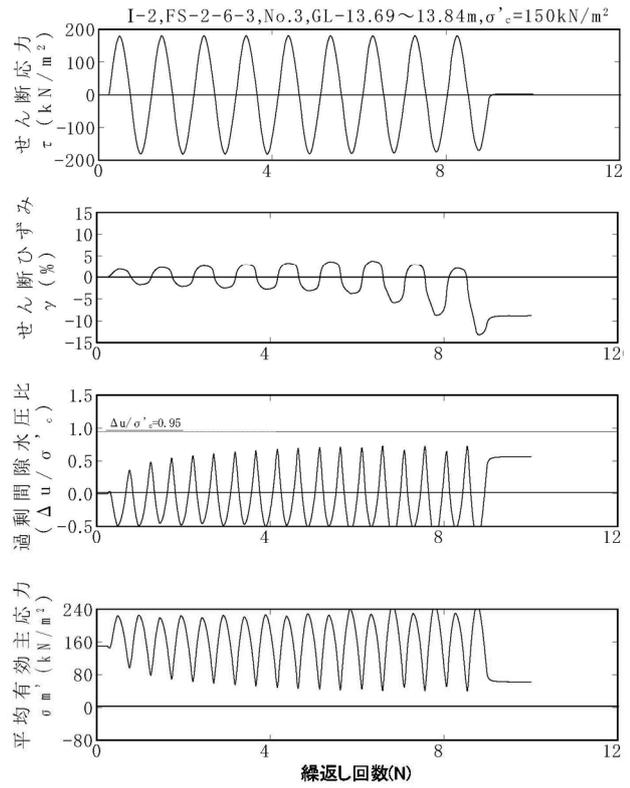
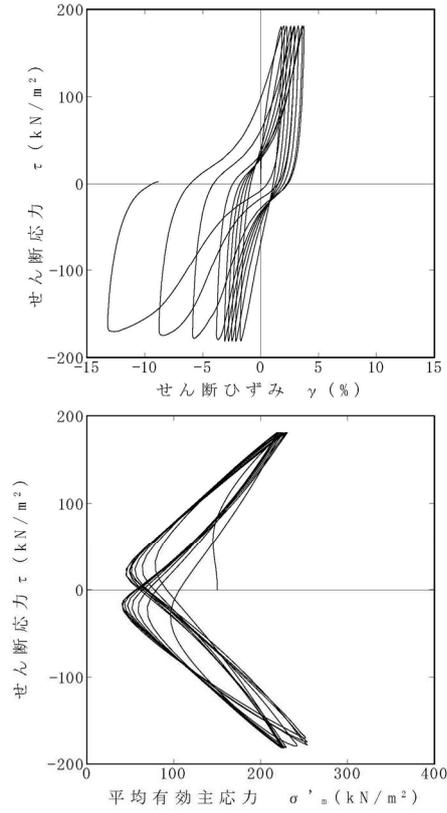


図 4-2-3 A-2 (洪積砂層 I) ( $\sigma'_e=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_e=1.20$ )

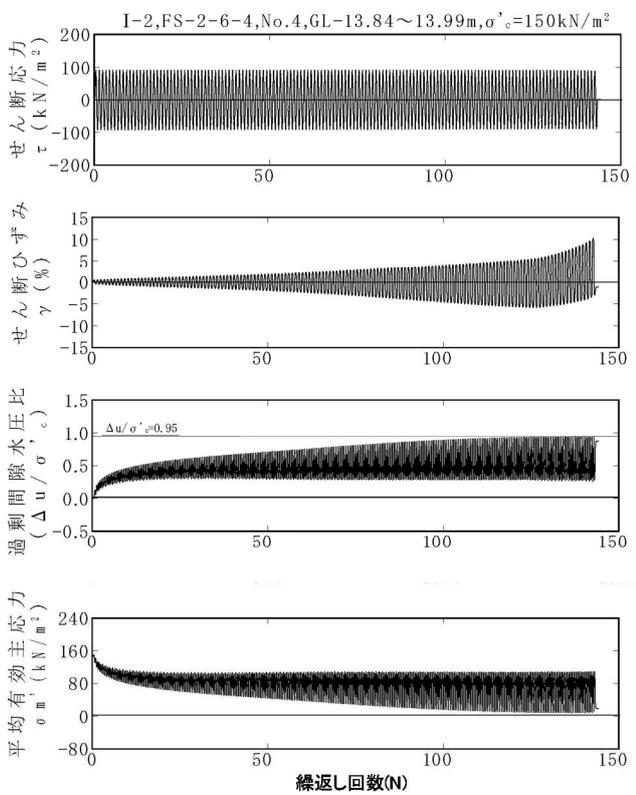
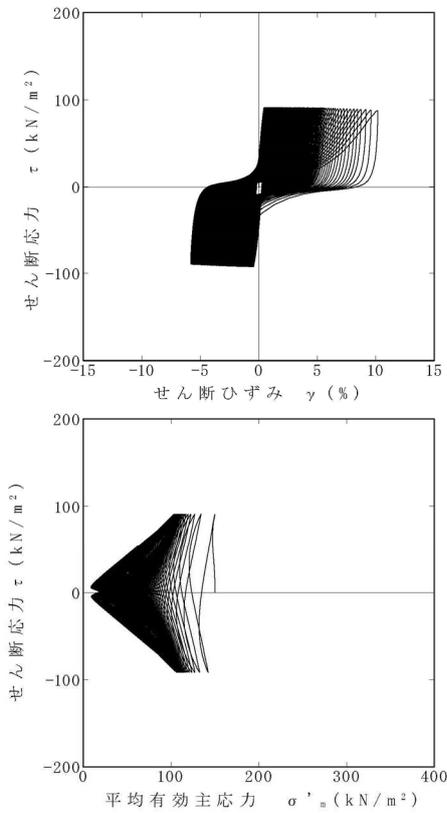


図 4-2-4 A-2 (洪積砂層 I) ( $\sigma'_e=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_e=0.61$ )

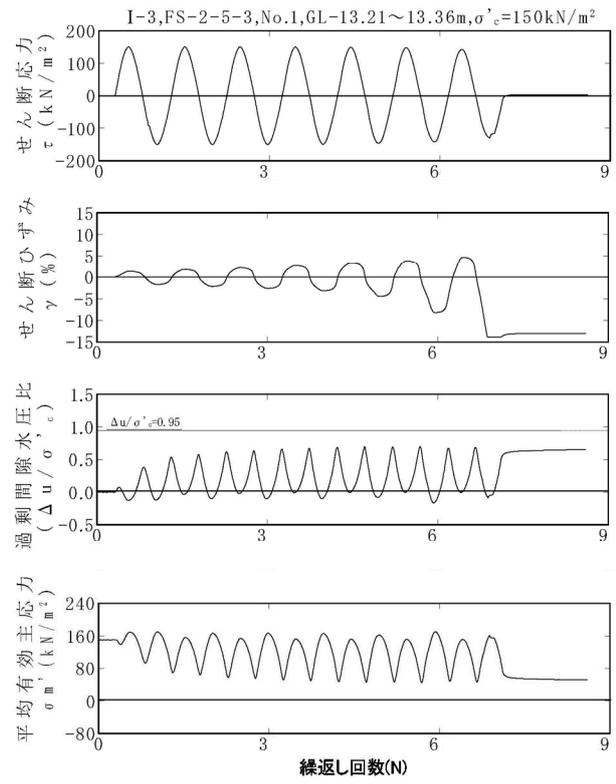
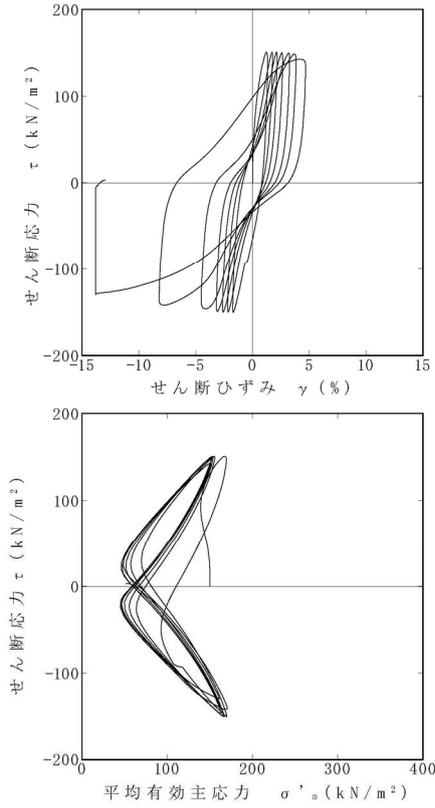


図 4-3-1 A-2 (洪積砂層 I) ( $\sigma'_c=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=1.01$ )

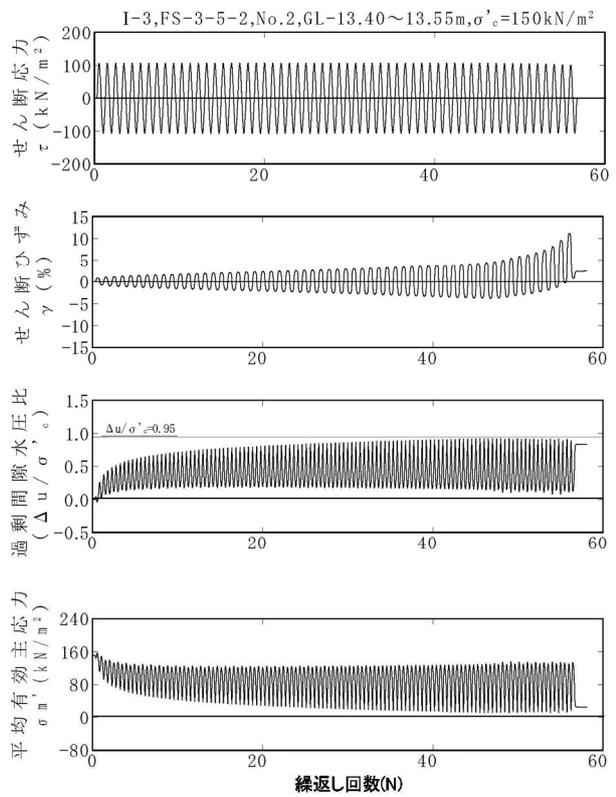
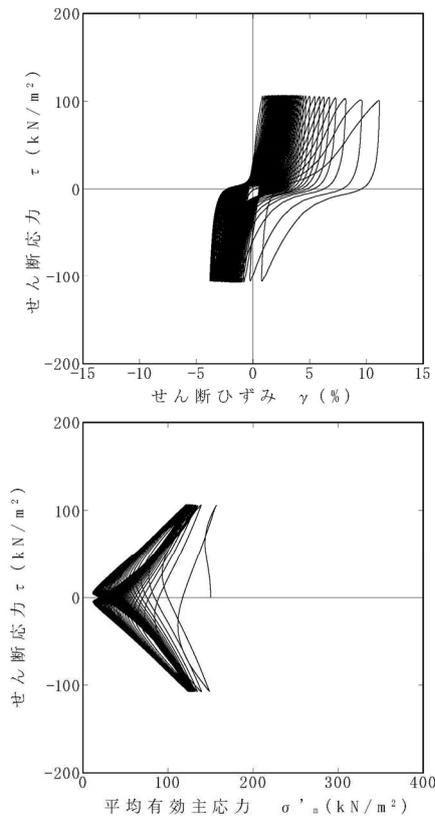


図 4-3-2 A-2 (洪積砂層 I) ( $\sigma'_c=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.71$ )

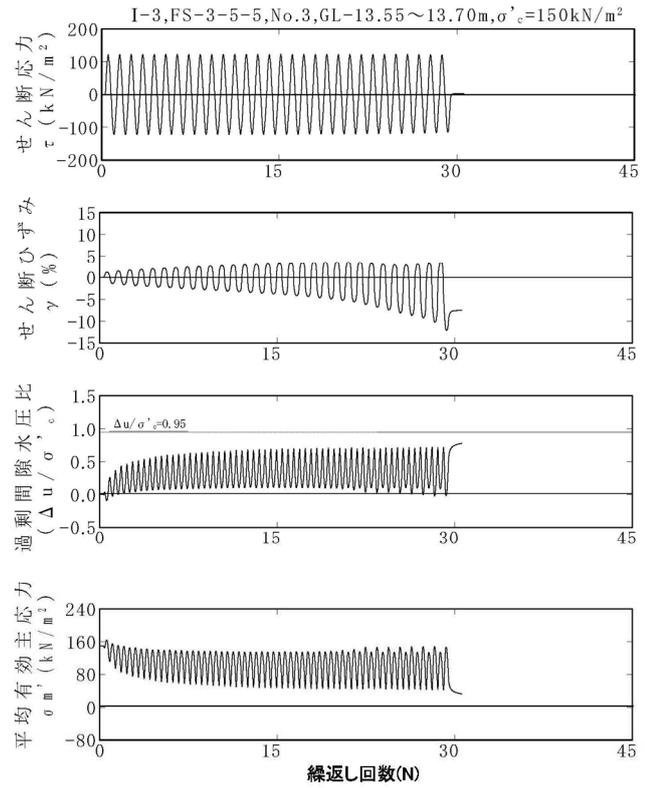
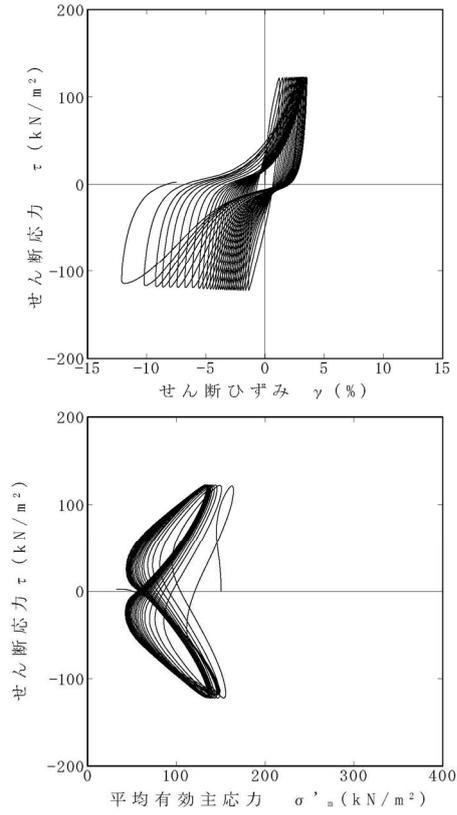


図 4-3-3 A-2 (洪積砂層 I) ( $\sigma'_c=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.81$ )

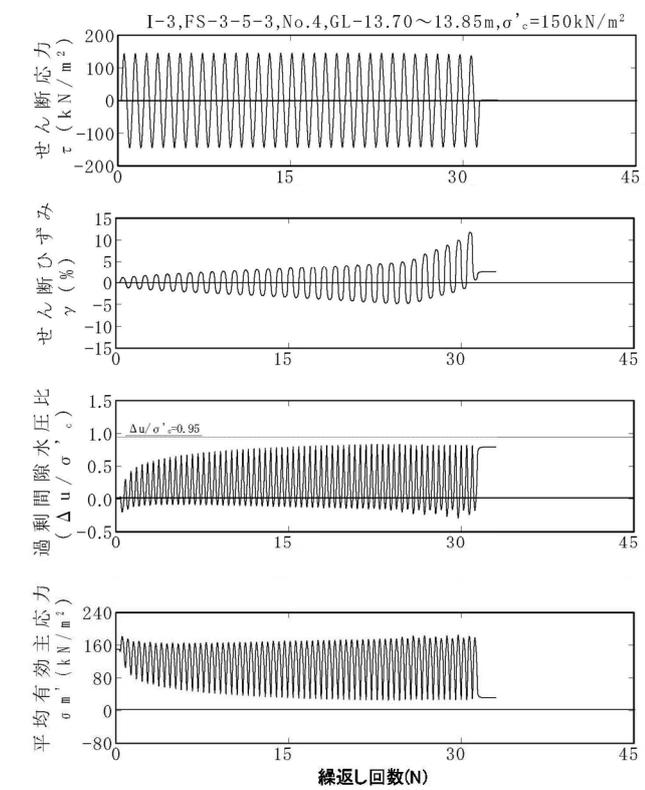
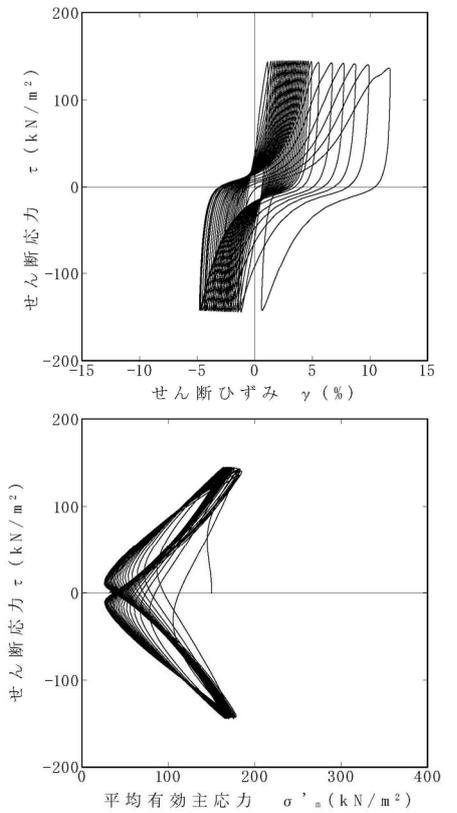


図 4-3-4 A-2 (洪積砂層 I) ( $\sigma'_c=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.96$ )

【A-2 (洪積砂層Ⅱ)】

試料番号		#4-2-1				#4-2-2				#4-2-3				
深度 G.L.- (m)		20.20~21.96				21.96~22.62				25.15~26.23				
土質材料		洪積砂層Ⅱ				洪積砂層Ⅱ				洪積砂層Ⅱ				
供試体 No.		1	2	3	4	1	2	3	4	1	2	3	4	
土粒子の密度 $\rho_s$ (g/cm <sup>3</sup> )		2.680				2.679				2.721				
圧密圧力 $\sigma_c'$ (kN/m <sup>2</sup> )		230				230				230				
せん断応力比 $\tau_d/\sigma_c'$		0.42	0.80	0.63	0.36	0.57	0.66	0.80	0.70	0.71	0.86	0.81	0.76	
繰返回数	せん断ひずみ 振幅	$\gamma_{DA}=1.5\%$	1.5	0.3	0.8	200	2.5	0.9	0.3	0.3	2	0.8	0.7	0.9
		$\gamma_{DA}=2.0\%$	3.5	0.4	1.5	-	6	2	0.5	0.4	5.5	1.5	1	2.5
		$\gamma_{DA}=3.0\%$	7	0.7	3.5	-	14	5.5	0.7	0.6	17	4.5	3	6
		$\gamma_{DA}=7.5\%$	20	3	15	-	46	22	3.5	2	74	17	14	22
		$\gamma_{DA}=15\%$	-	7.5	-	-	78	-	6.5	4.5	110	-	24	36
	間隙水圧比 95% $N_{u95}$		-	-	-	-	61	-	-	-	87	-	-	-

■ : 最大過剰間隙水圧比が 1.0 に近づく (0.95 を越えるもの)

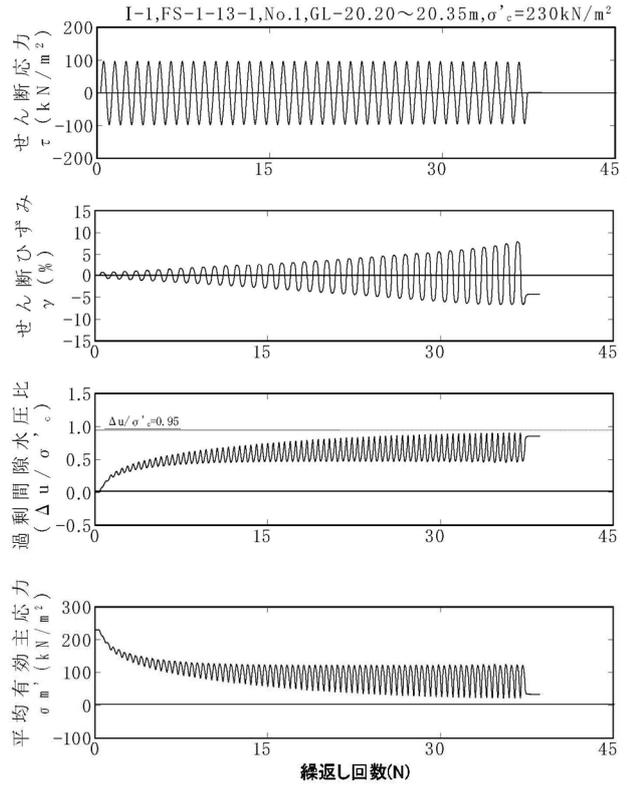
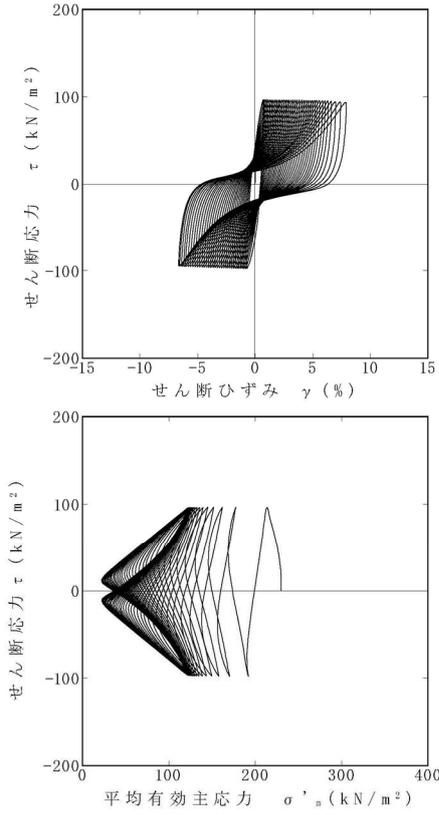


図 4-4-1 A-2 (洪積砂層Ⅱ) ( $\sigma'_e=230\text{kN/m}^2$ ,  $\tau_d/\sigma'_e=0.42$ )

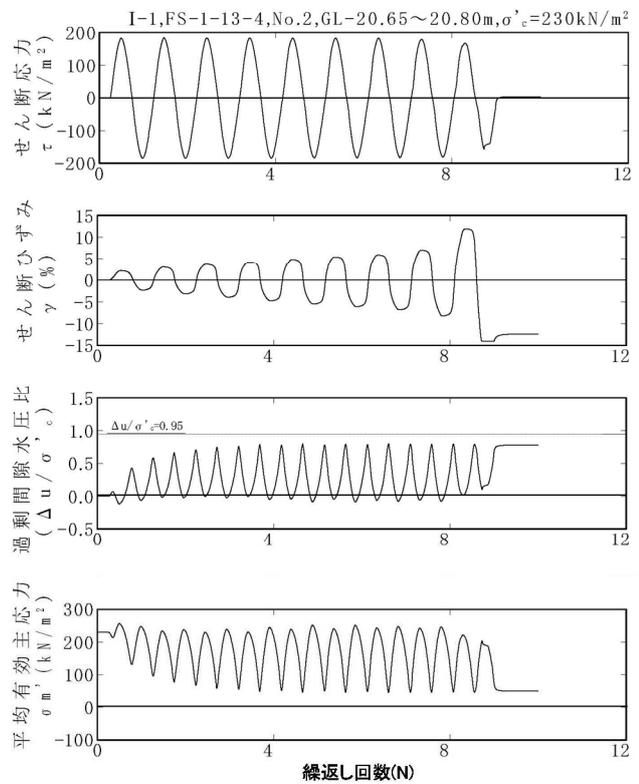
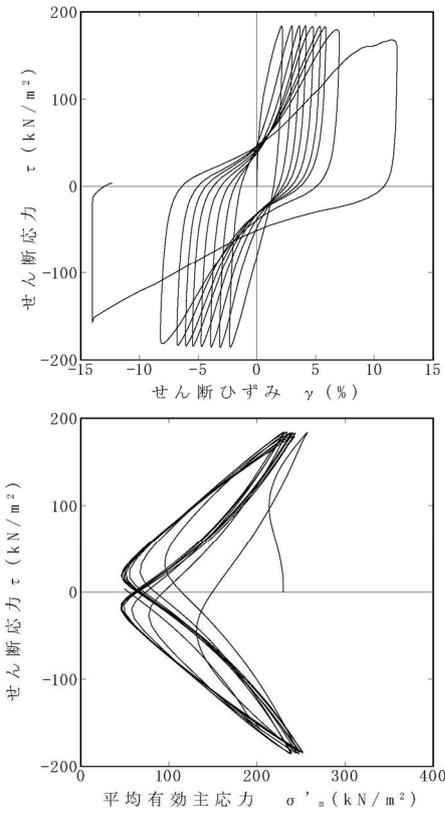


図 4-4-2 A-2 (洪積砂層Ⅱ) ( $\sigma'_e=230\text{kN/m}^2$ ,  $\tau_d/\sigma'_e=0.80$ )

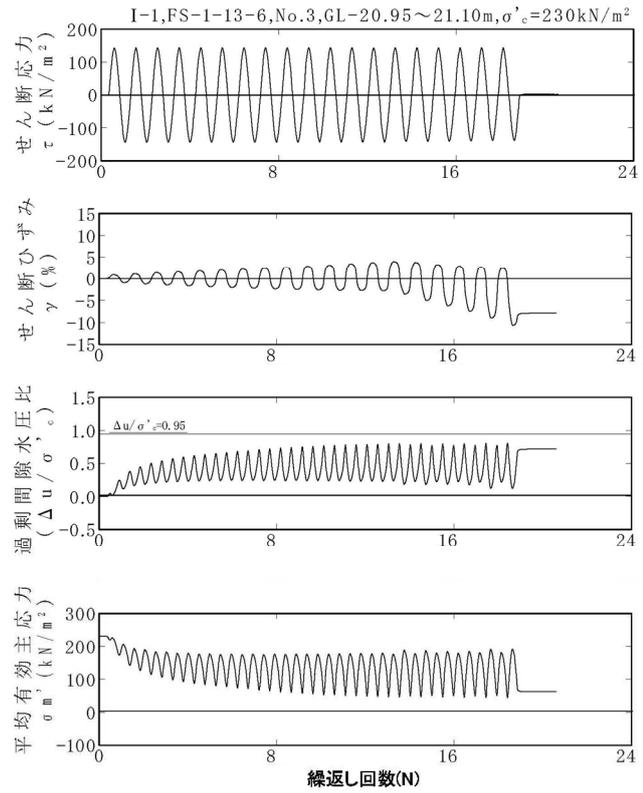
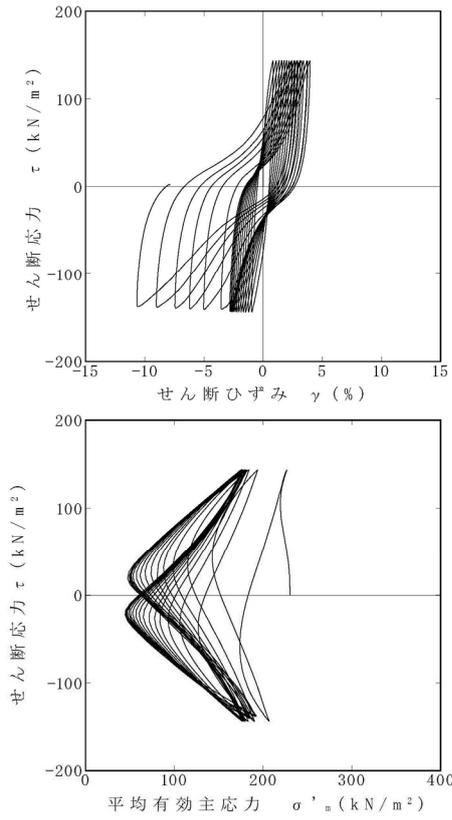


図 4-4-3 A-2 (洪積砂層Ⅱ) ( $\sigma'_c=230\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.63$ )

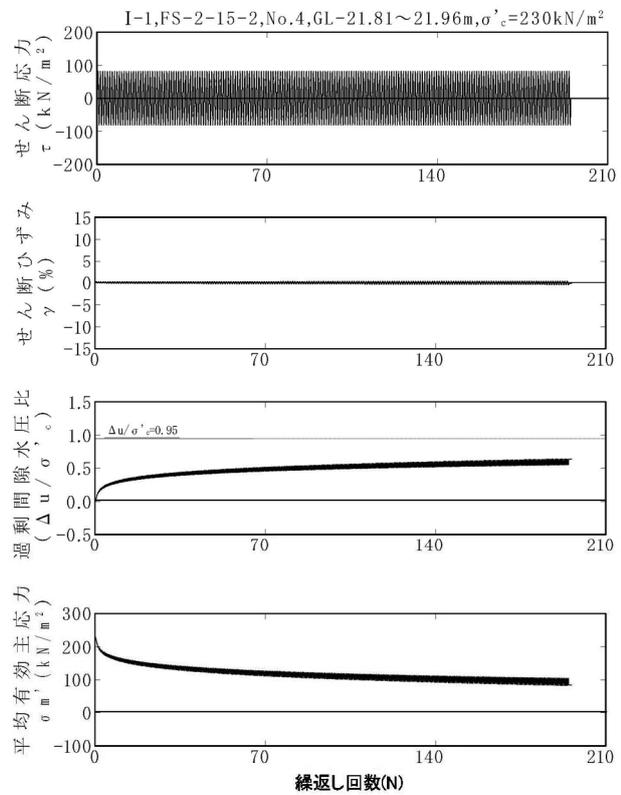
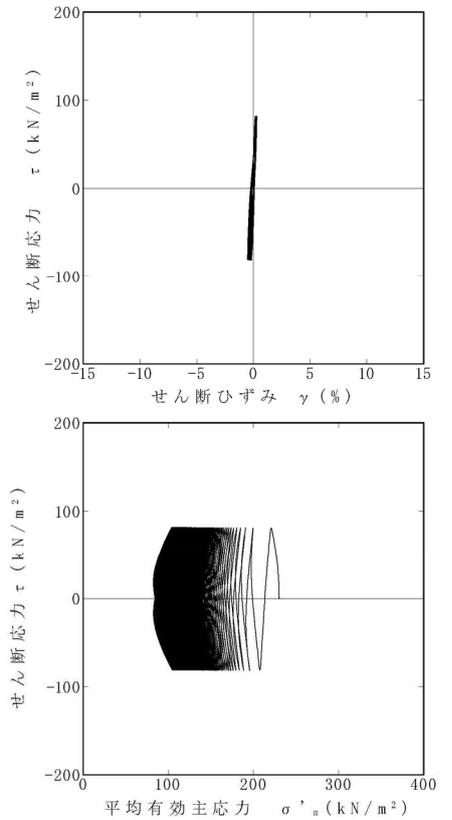


図 4-4-4 A-2 (洪積砂層Ⅱ) ( $\sigma'_c=230\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.36$ )

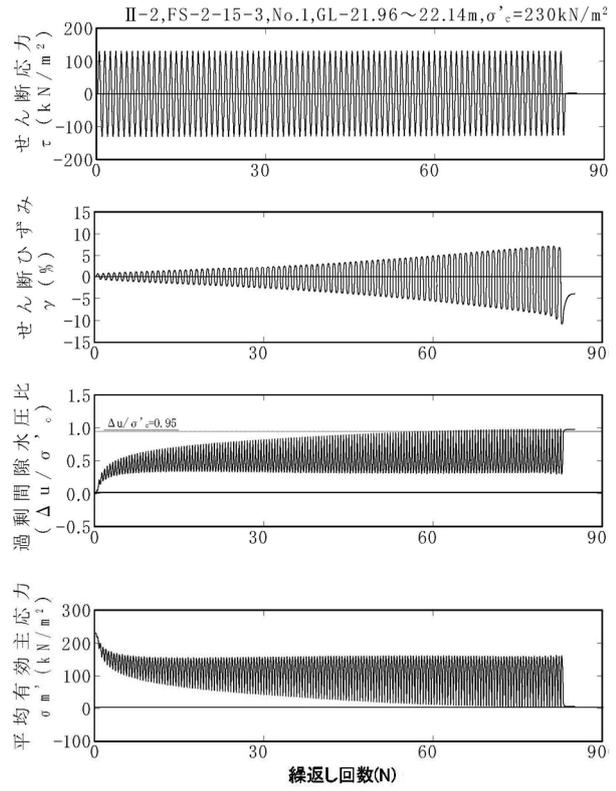
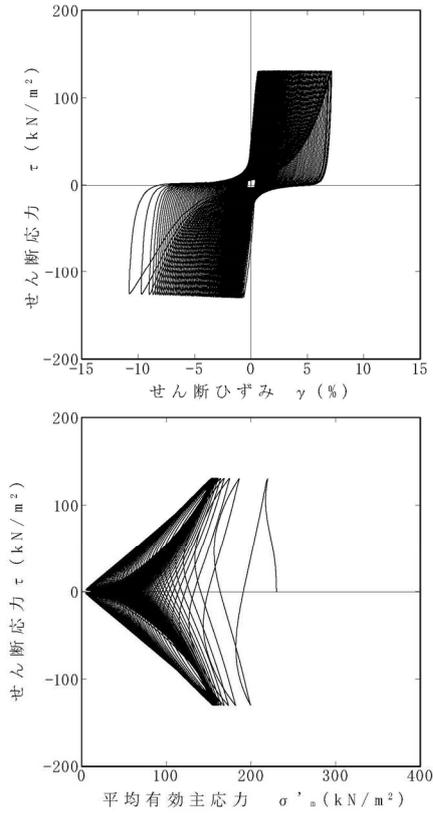


図 4-5-1 A-2 (洪積砂層 II) ( $\sigma'_e=230\text{kN/m}^2$ ,  $\tau_d/\sigma'_e=0.57$ )

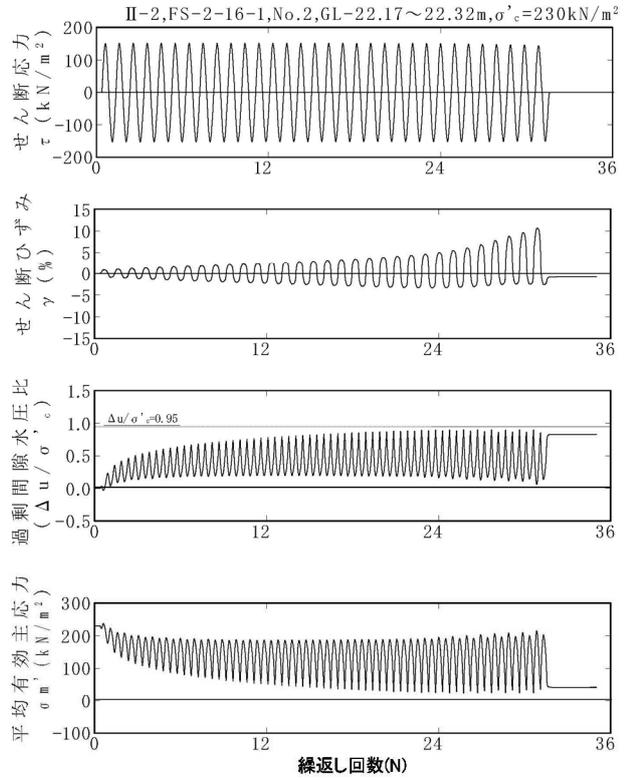
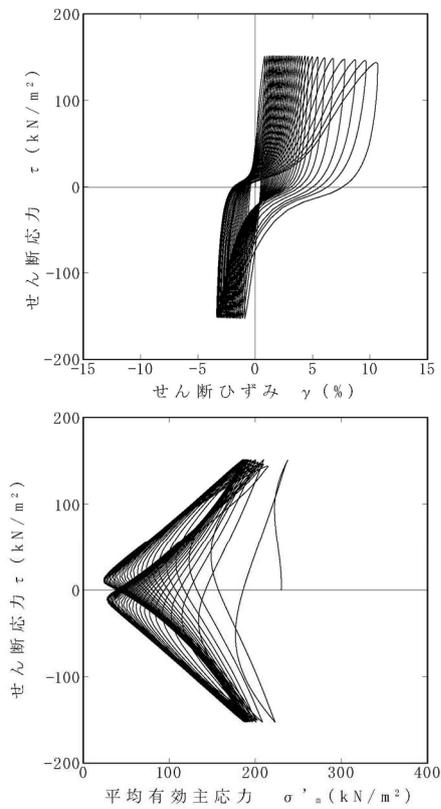


図 4-5-2 A-2 (洪積砂層 II) ( $\sigma'_e=230\text{kN/m}^2$ ,  $\tau_d/\sigma'_e=0.66$ )

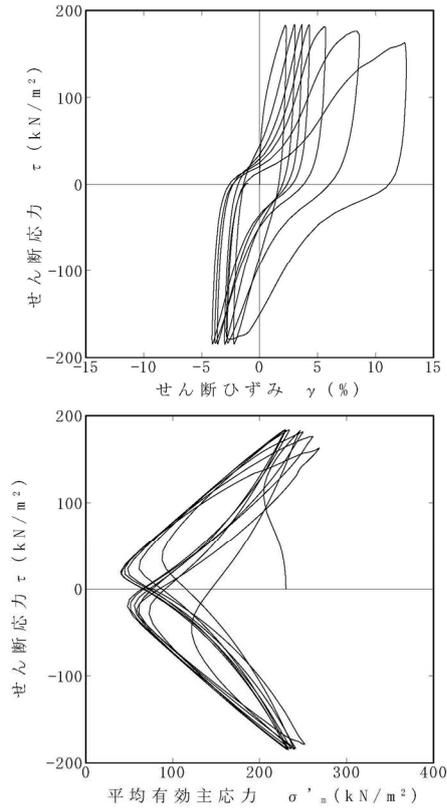


図 4-5-3 A-2 (洪積砂層 II) ( $\sigma'_c=230\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.80$ )

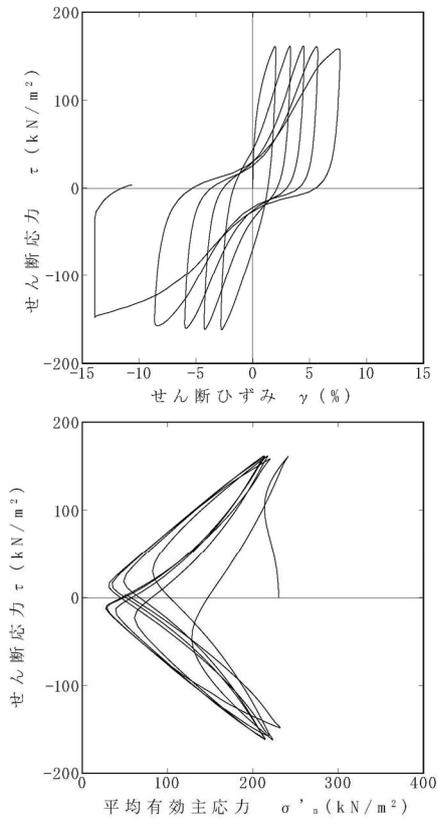
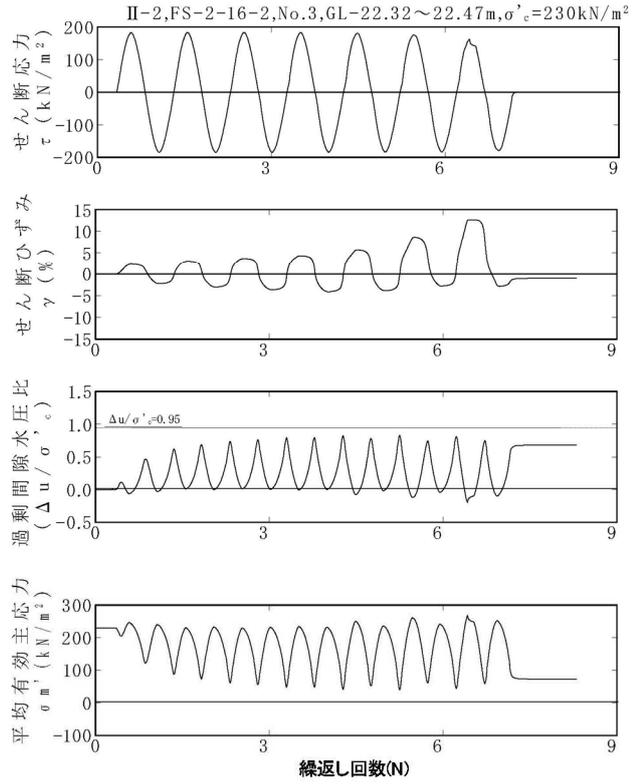
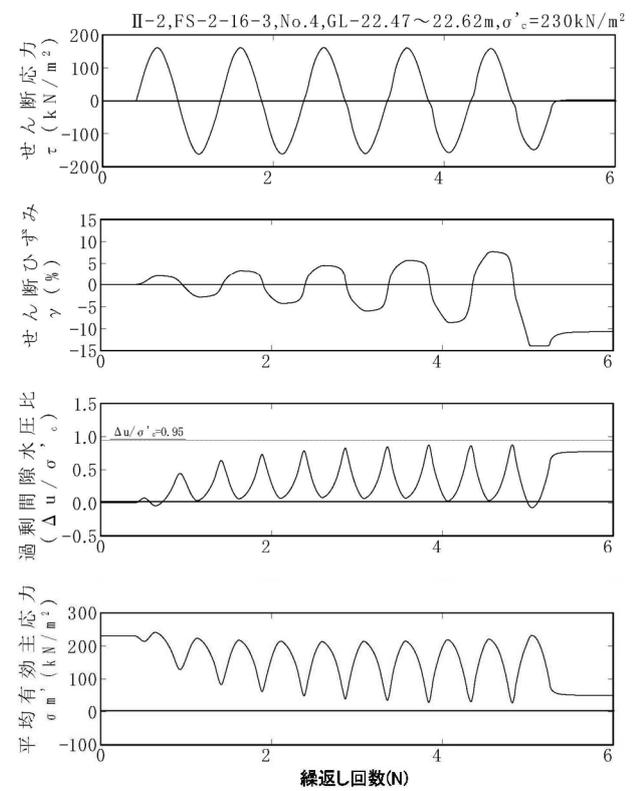


図 4-5-4 A-2 (洪積砂層 II) ( $\sigma'_c=230\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.70$ )



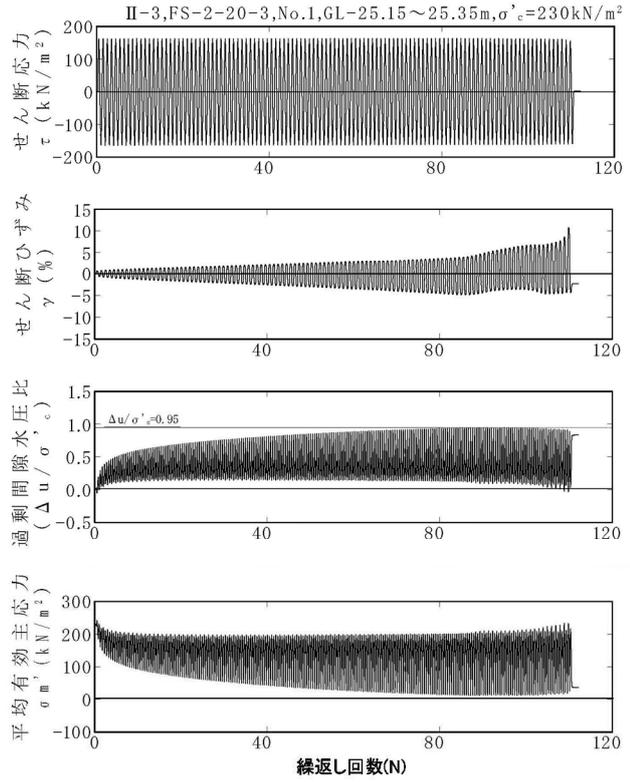
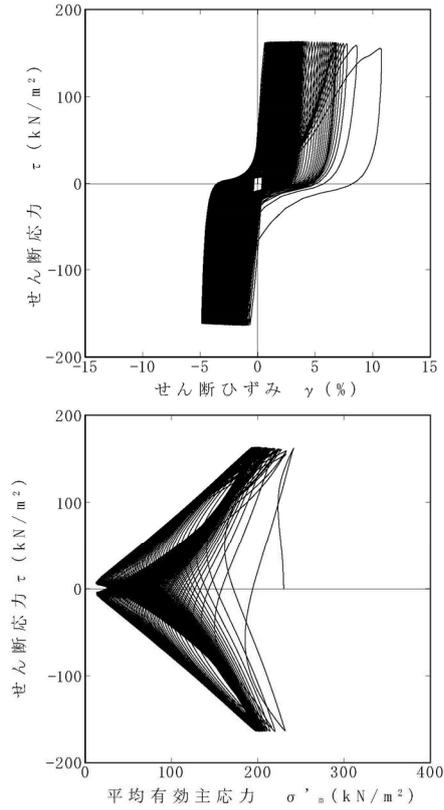


図 4-6-1 A-2 (洪積砂層 II) ( $\sigma'_e=230\text{kN/m}^2$ ,  $\tau_d / \sigma'_e=0.71$ )

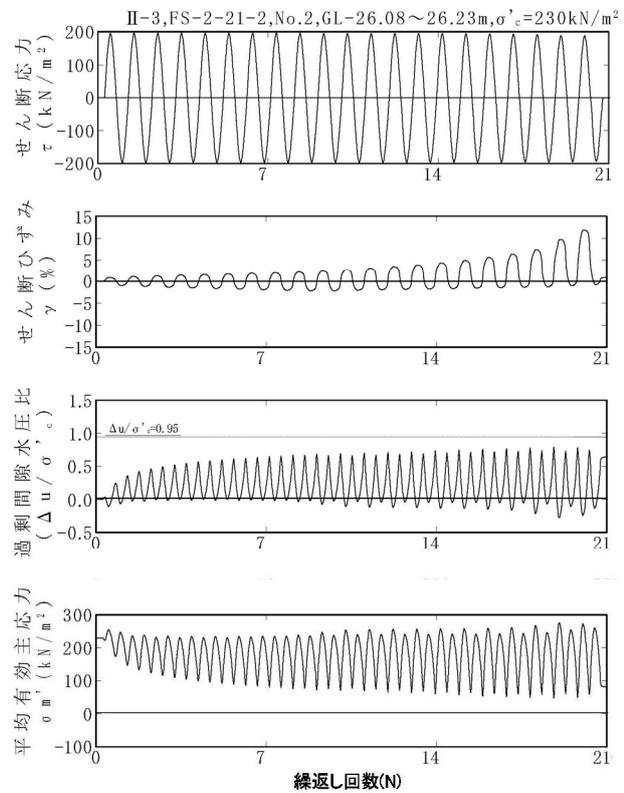
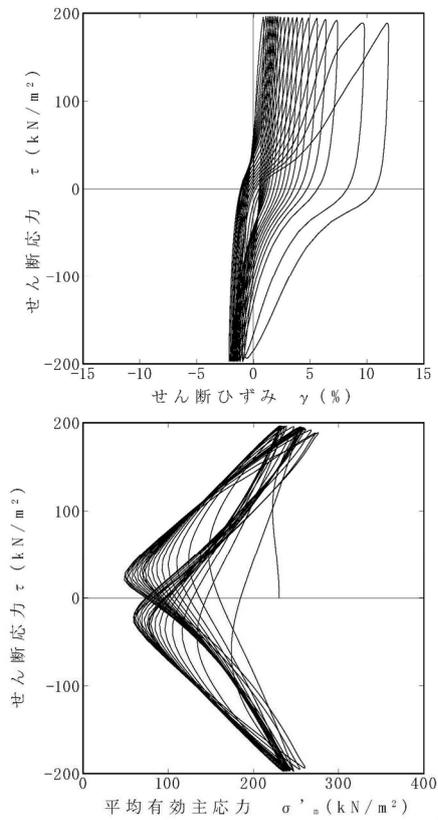


図 4-6-2 A-2 (洪積砂層 II) ( $\sigma'_e=230\text{kN/m}^2$ ,  $\tau_d / \sigma'_e=0.86$ )

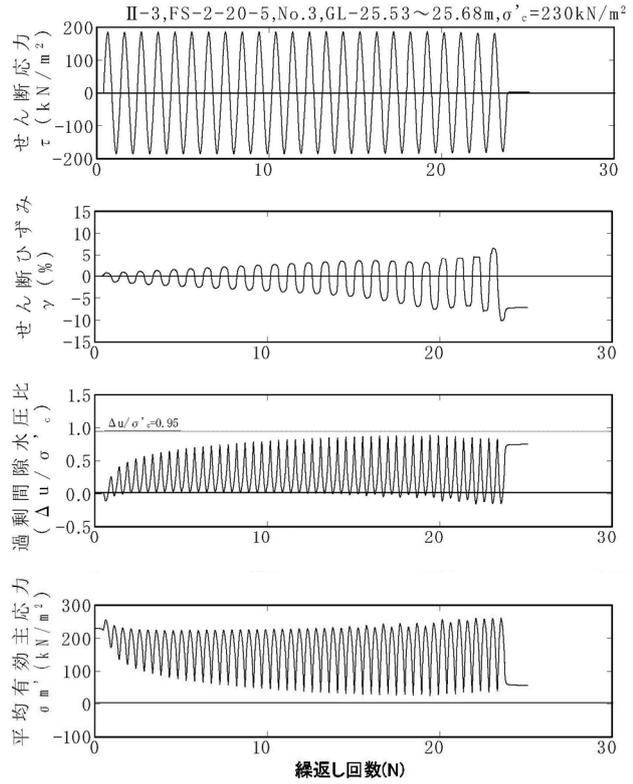
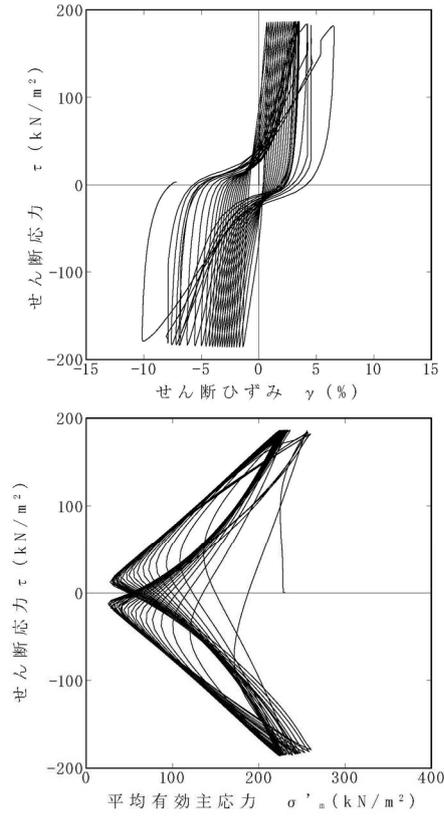


図 4-6-3 A-2 (洪積砂層 II) ( $\sigma'_e=230\text{kN/m}^2$ ,  $\tau_d/\sigma'_e=0.81$ )

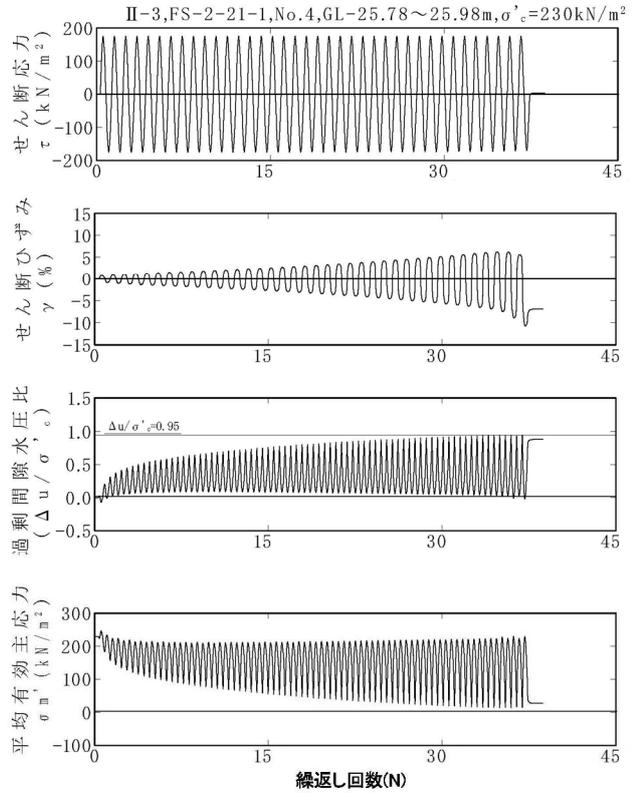
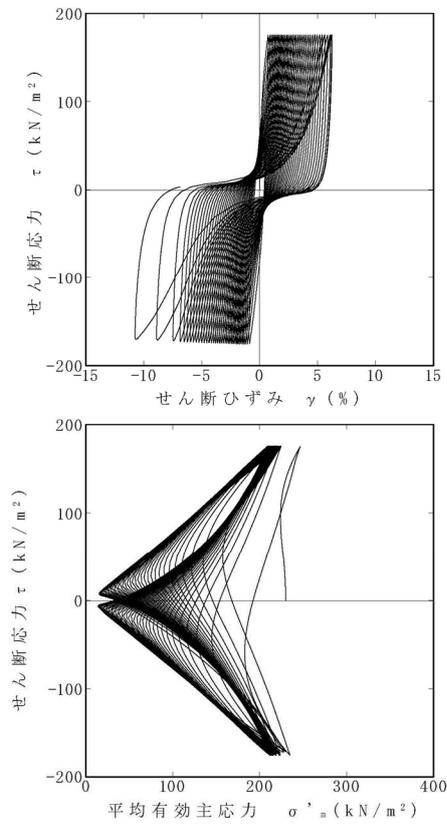


図 4-6-4 A-2 (洪積砂層 II) ( $\sigma'_e=230\text{kN/m}^2$ ,  $\tau_d/\sigma'_e=0.76$ )

【A-3 (新期砂層・沖積層)】

試料番号		#4-3-1				#4-3-2				#4-3-3				
深度 G.L.- (m)		13.04~13.51				13.00~13.68				14.96~15.43				
土質材料		新期砂層・沖積層				新期砂層・沖積層				新期砂層・沖積層				
供試体 No.		1	2	3	4	1	2	3	4	1	2	3	4	
土粒子の密度 $\rho_s$ (g/cm <sup>3</sup> )		2.719				2.780				2.685				
圧密圧力 $\sigma_c'$ (kN/m <sup>2</sup> )		150				150				150				
せん断応力比 $\tau_d/\sigma_c'$		0.81	0.70	0.62	0.49	0.81	0.91	0.72	0.54	0.60	0.81	0.70	1.02	
繰返回数	せん断ひずみ 振幅	$\gamma_{DA}=1.5\%$	0.5	0.6	0.7	2	0.5	0.3	0.6	0.9	0.8	0.3	0.7	0.3
		$\gamma_{DA}=2.0\%$	0.6	0.8	0.9	3.5	0.7	0.4	0.8	1.5	1.5	0.5	0.9	0.4
		$\gamma_{DA}=3.0\%$	0.9	2	2	8.5	1	0.6	2	4	5	0.7	3	0.5
		$\gamma_{DA}=7.5\%$	15	19	18	50	24	9	24	21	32	9	22	8
		$\gamma_{DA}=15\%$	76	96	53	146	112	91	77	65	94	43	60	77
	間隙水圧比 95% $N_{u95}$		28	28	30	40	38	44	34	24	38	25	28	39

■ : 最大過剰間隙水圧比が 1.0 に近づく (0.95 を越えるもの)

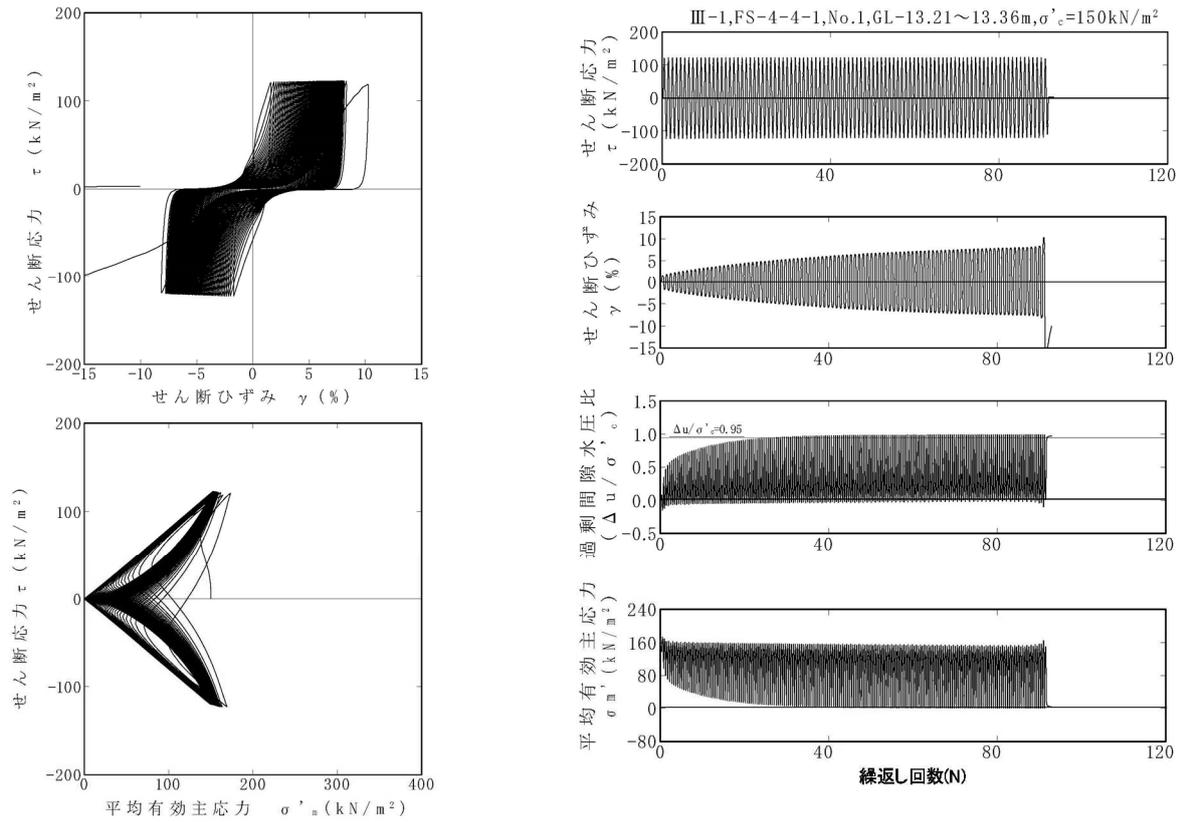


図 4-7-1 A-3 (新期砂層・沖積層) ( $\sigma'_c=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.81$ )

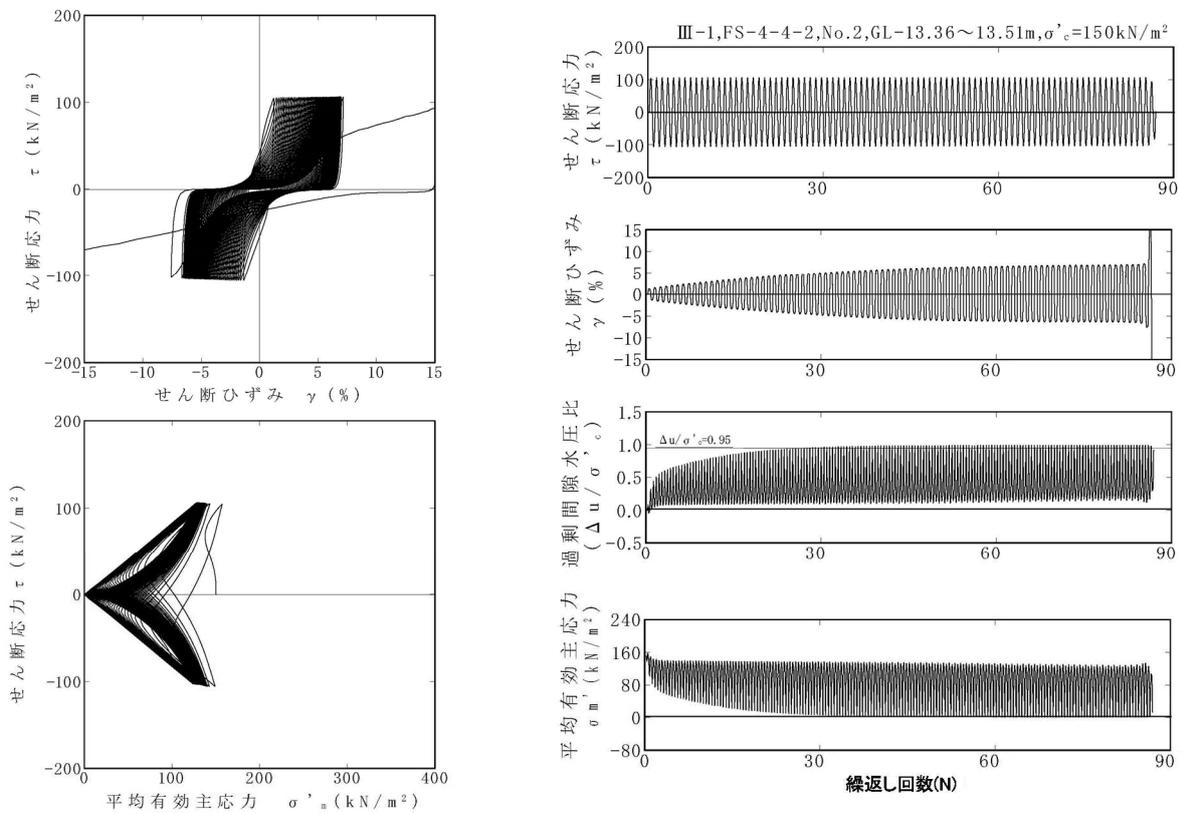


図 4-7-2 A-3 (新期砂層・沖積層) ( $\sigma'_c=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.70$ )

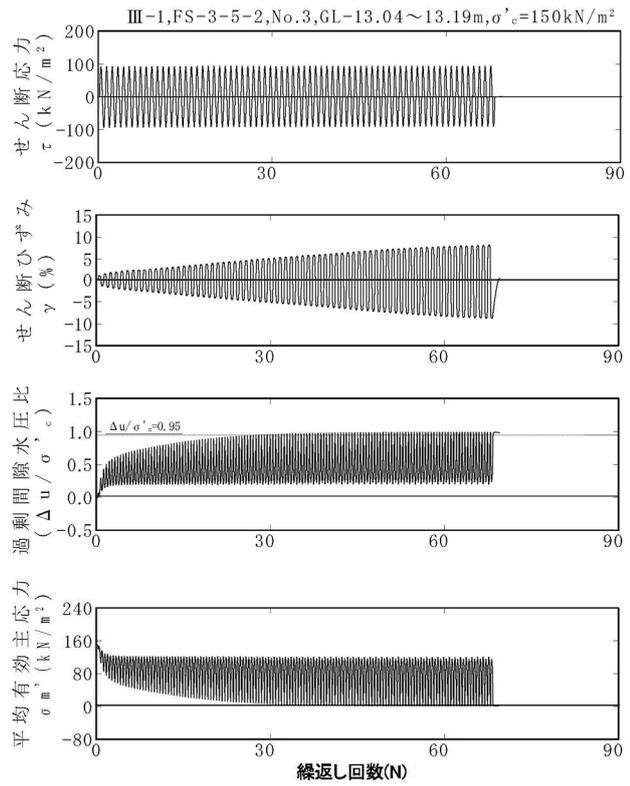
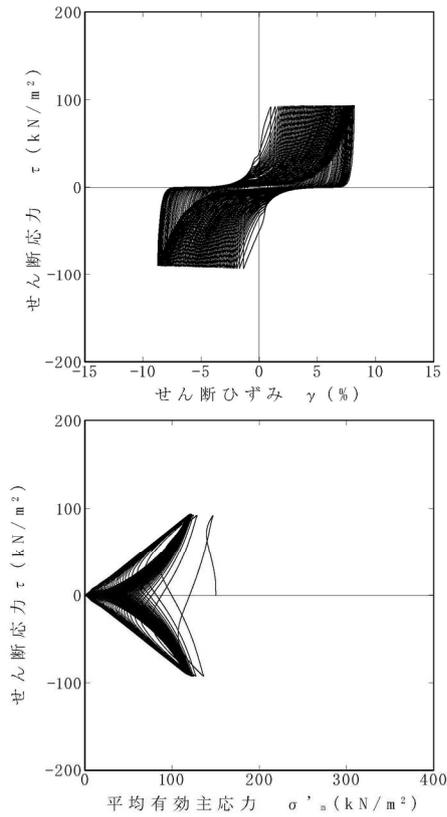


図 4-7-3 A-3 (新期砂層・沖積層) ( $\sigma'_c=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.62$ )

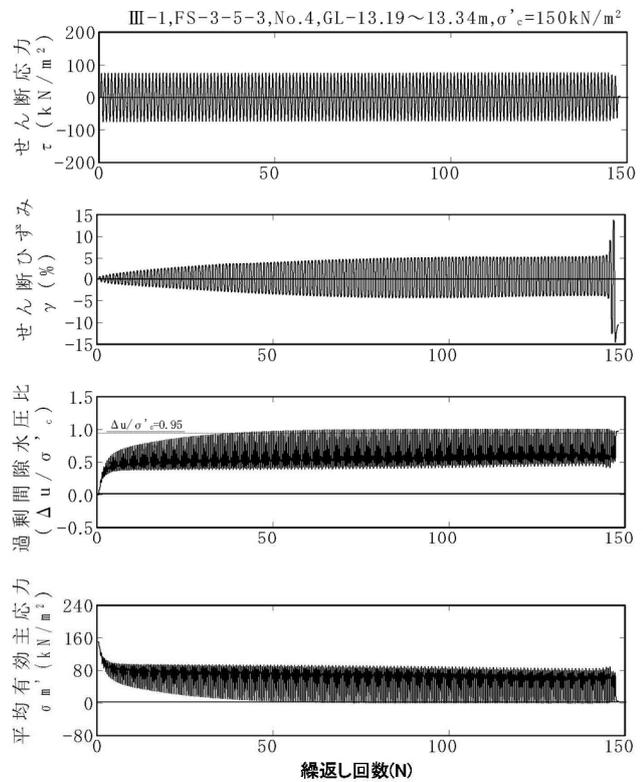
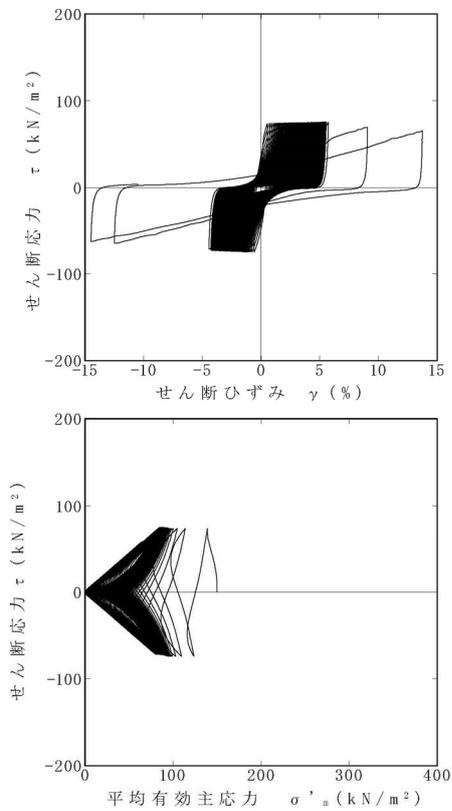


図 4-7-4 A-3 (新期砂層・沖積層) ( $\sigma'_c=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.49$ )

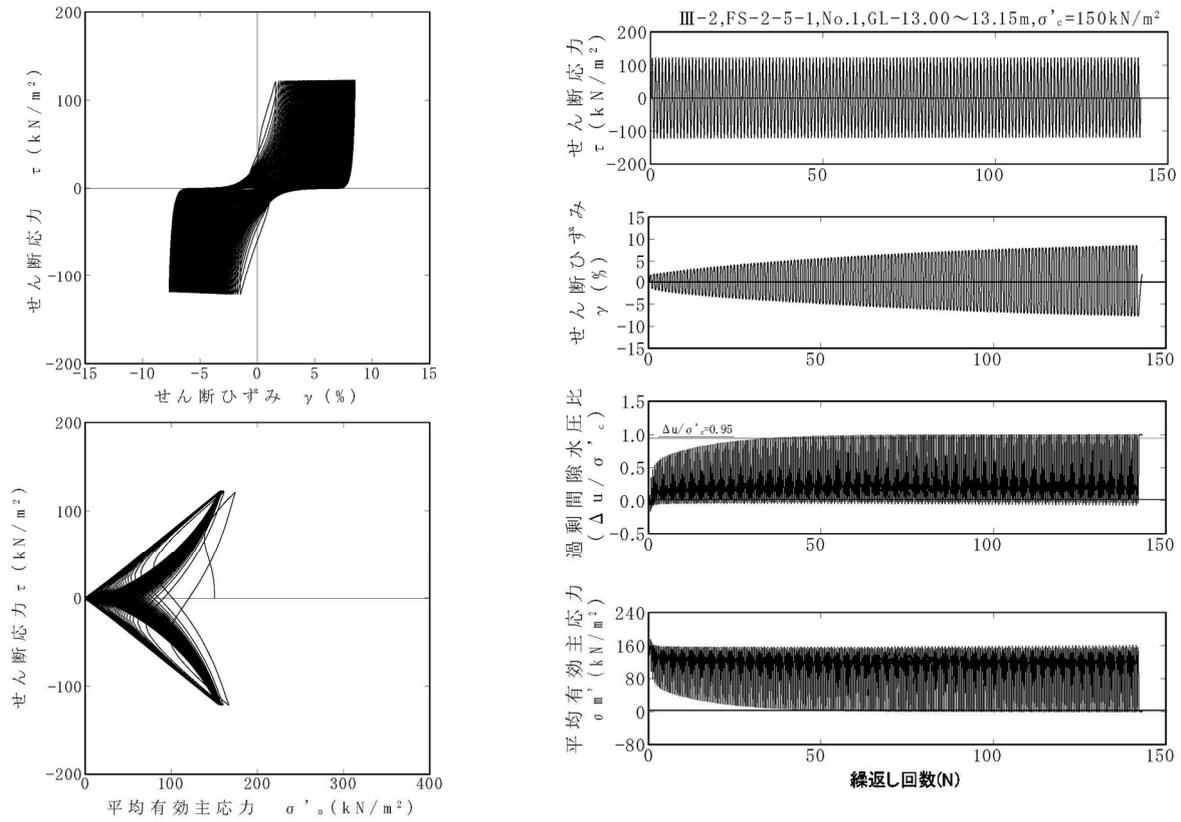


図 4-8-1 A-3 (新期砂層・沖積層) ( $\sigma'_e=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_e=0.81$ )

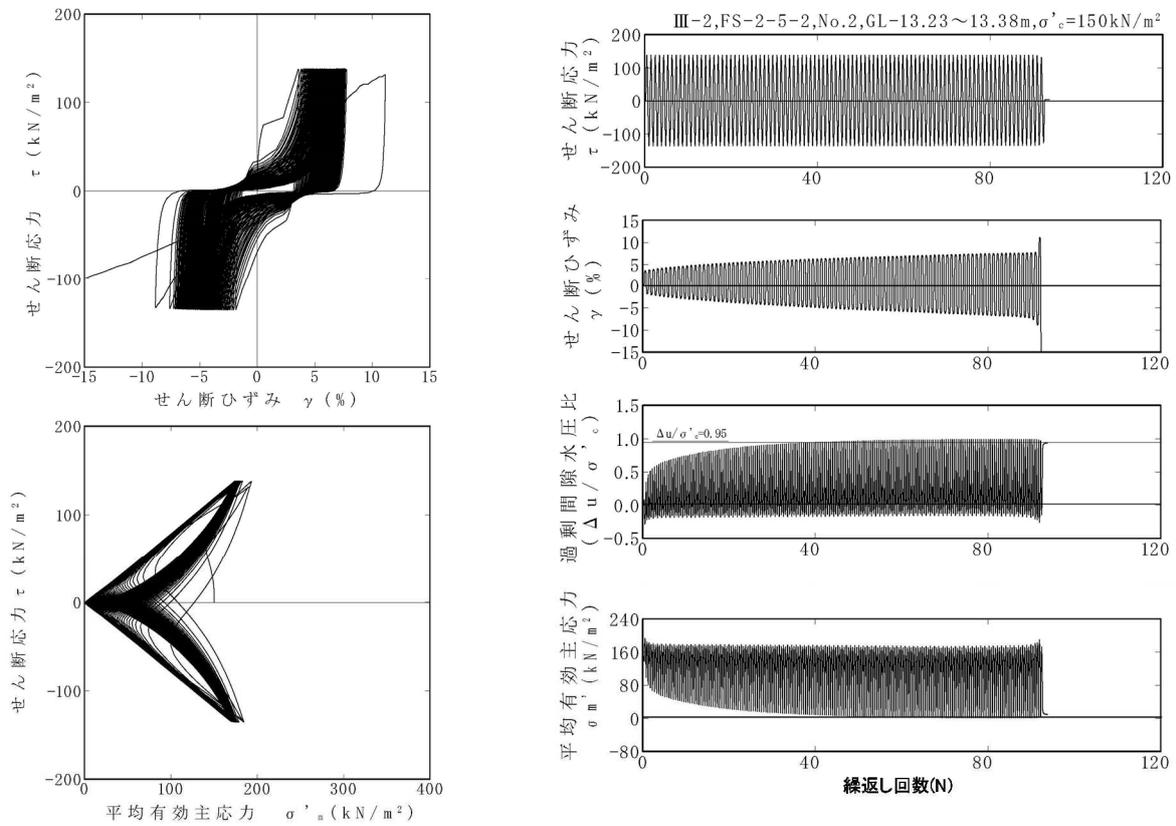


図 4-8-2 A-3 (新期砂層・沖積層) ( $\sigma'_e=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_e=0.91$ )

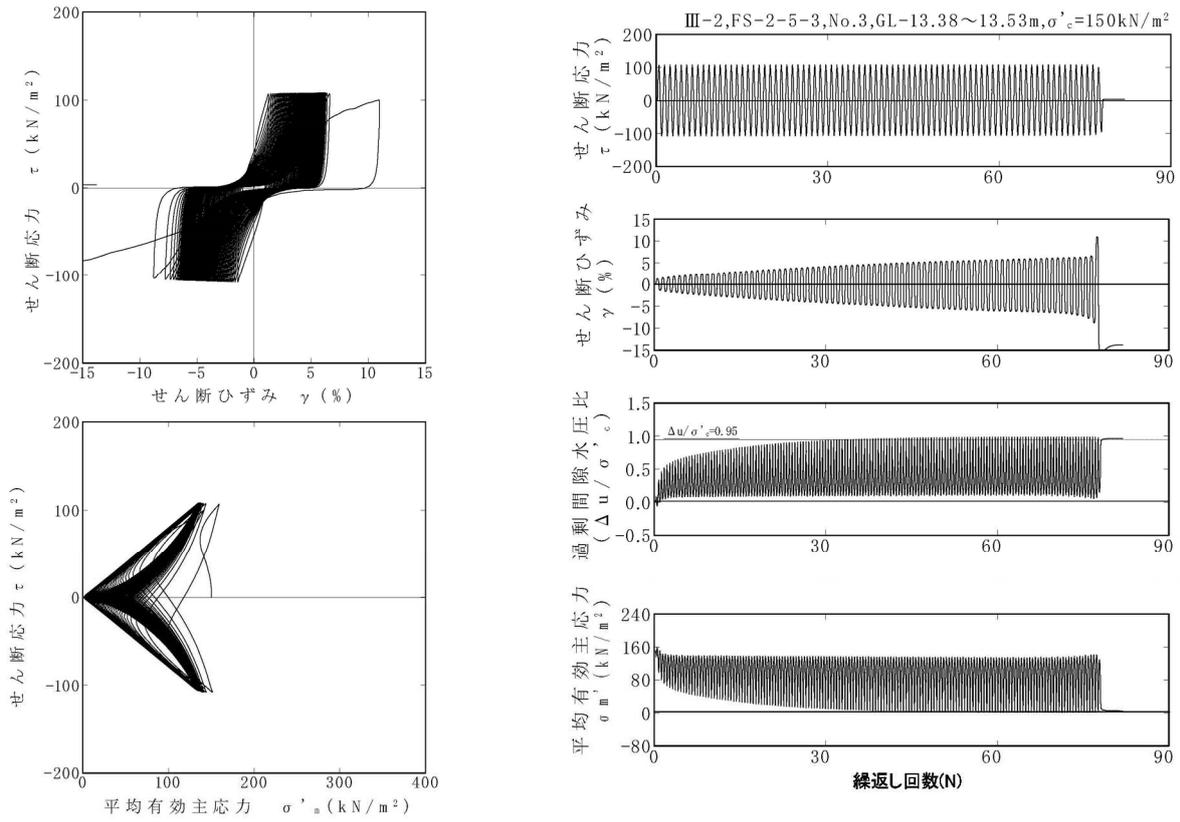


図 4-8-3 A-3 (新期砂層・沖積層) ( $\sigma'_c=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.72$ )

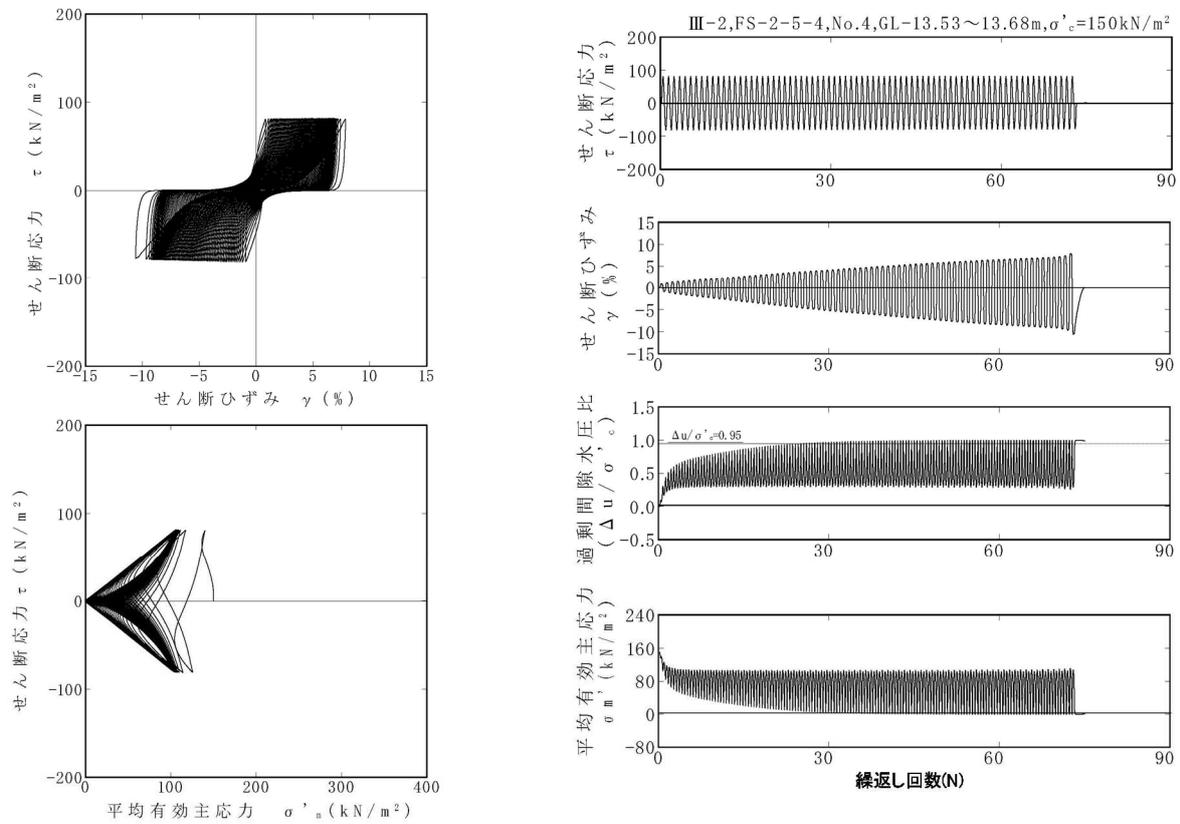


図 4-8-4 A-3 (新期砂層・沖積層) ( $\sigma'_c=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.54$ )

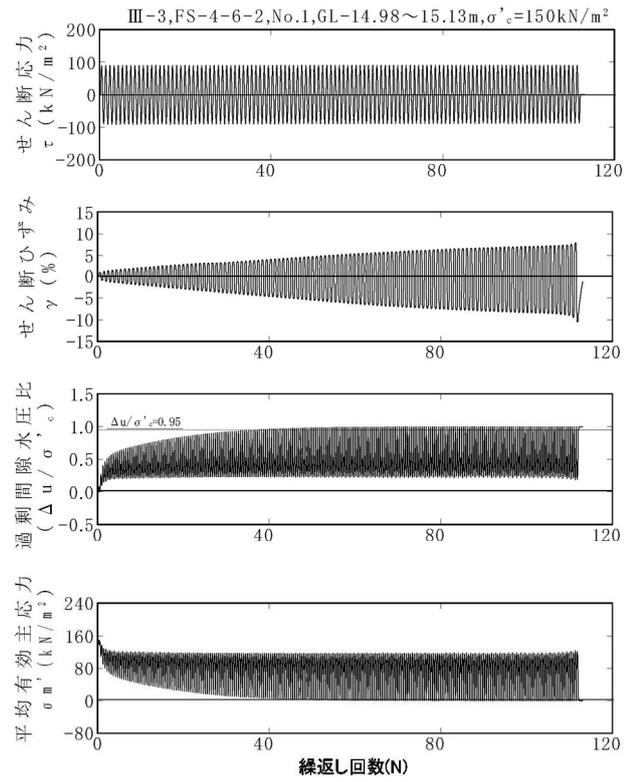
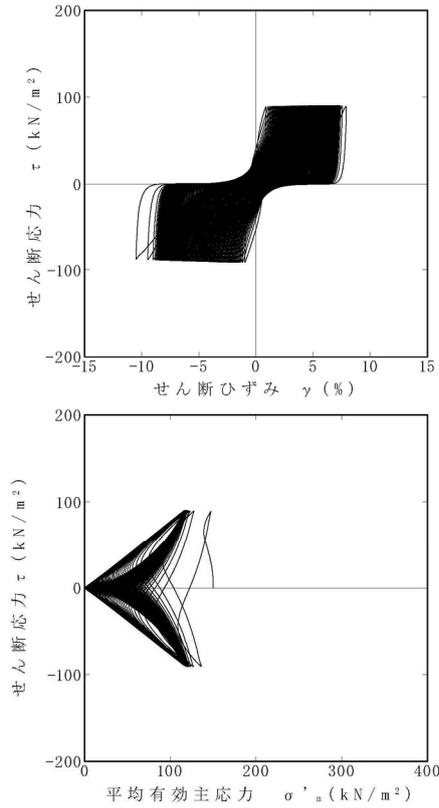


図 4-9-1 A-3 (新期砂層・沖積層) ( $\sigma'_c=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.60$ )

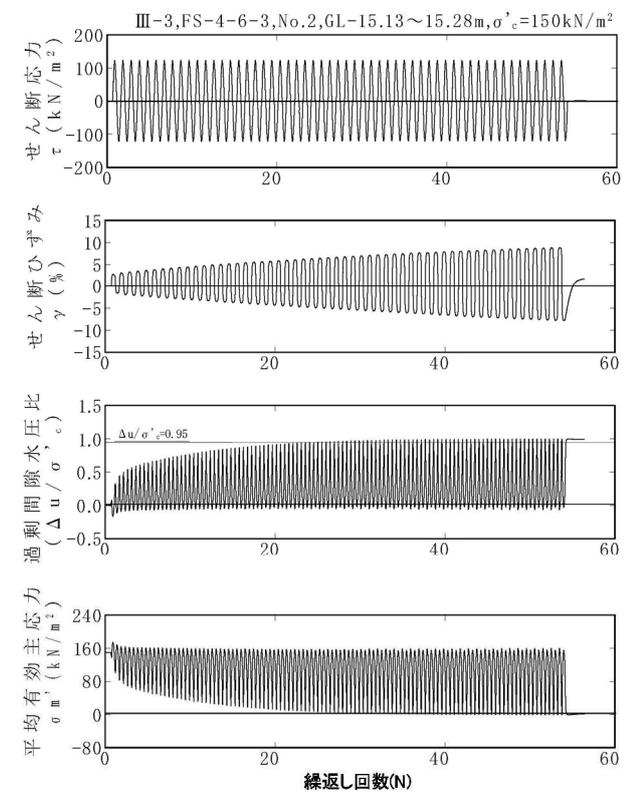
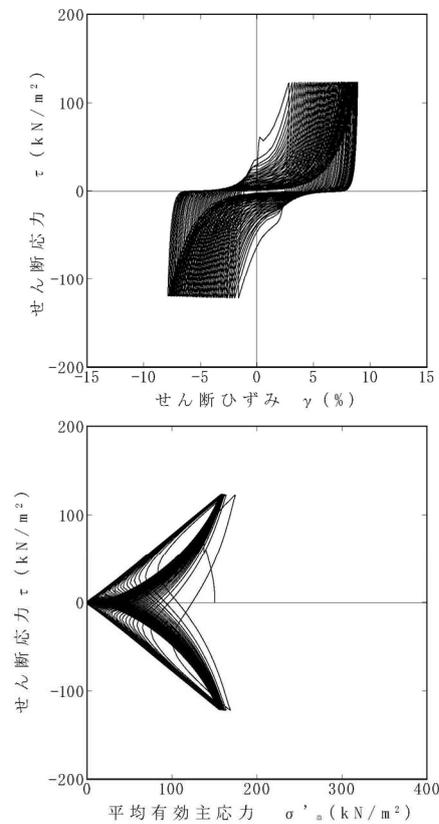


図 4-9-2 A-3 (新期砂層・沖積層) ( $\sigma'_c=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.81$ )

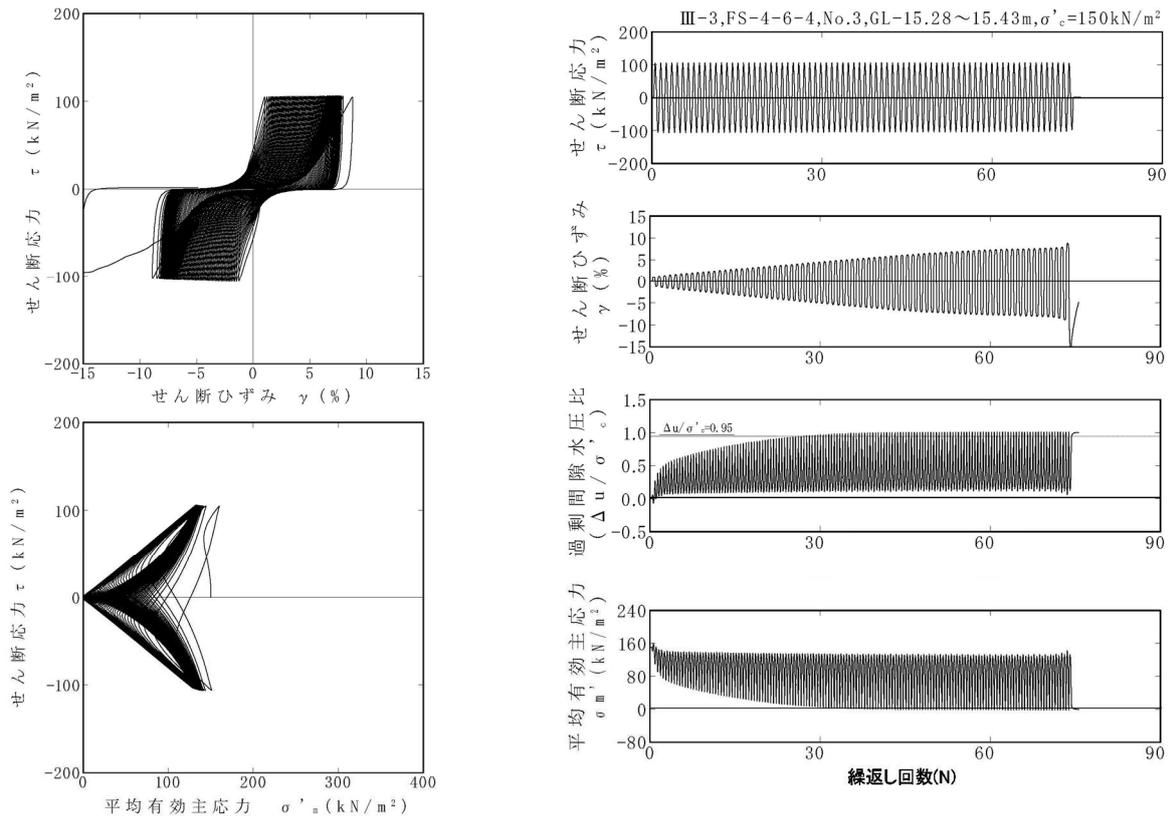


図 4-9-3 A-3 (新期砂層・沖積層) ( $\sigma'_{e}=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_{e}=0.70$ )

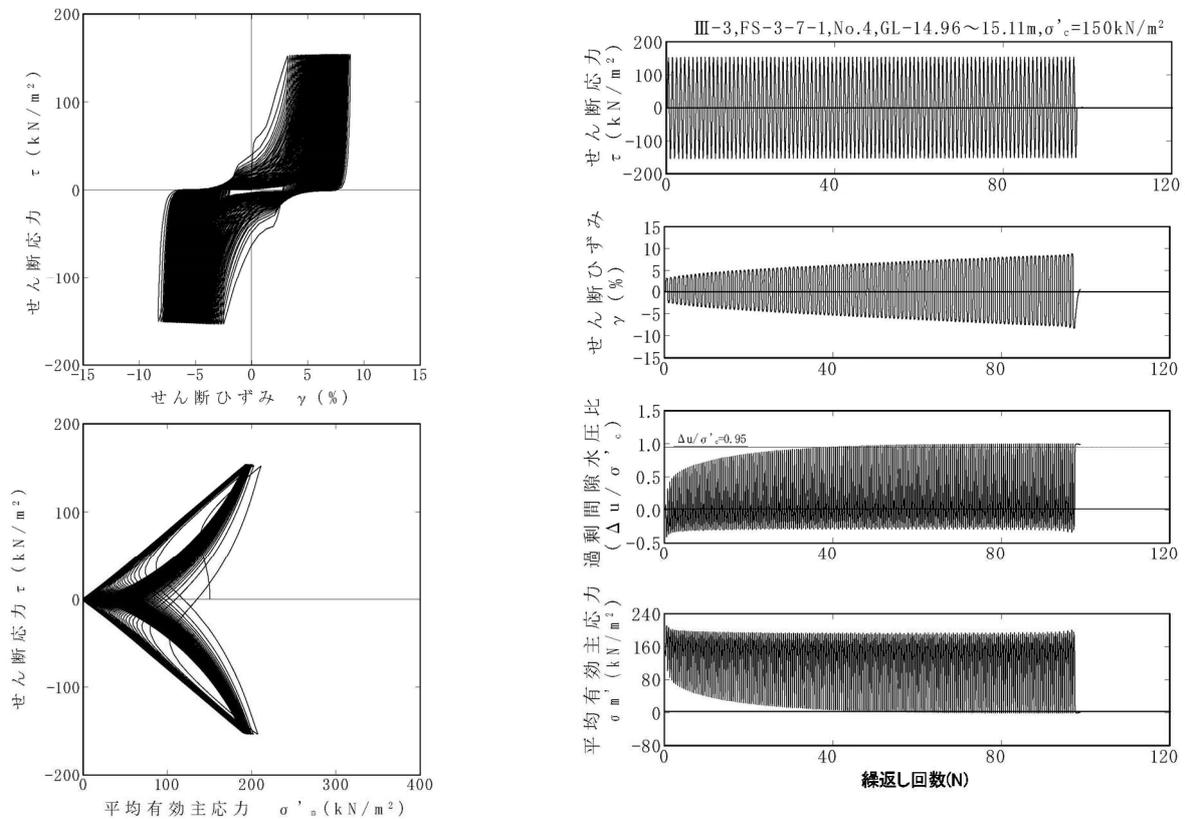


図 4-9-4 A-3 (新期砂層・沖積層) ( $\sigma'_{e}=150\text{kN/m}^2$ ,  $\tau_d/\sigma'_{e}=1.02$ )

【O-1 (洪積砂質土層 I)】

試料番号		#6-1-1				#6-1-2				#6-1-3				
深度 G.L.- (m)		27.68~28.16				26.95~27.63				26.88~27.48				
土質材料		洪積砂質土層 I				洪積砂質土層 I				洪積砂質土層 I				
供試体 No.		1	2	3	4	1	2	3	4	1	2	3	4	
土粒子の密度 $\rho_s$ (g/cm <sup>3</sup> )		2.649				2.677				2.669				
圧密圧力 $\sigma_c'$ (kN/m <sup>2</sup> )		363				363				363				
せん断応力比 $\tau_d/\sigma_c'$		0.51	0.60	0.78	0.64	0.51	0.61	0.78	0.68	0.51	0.46	0.35	0.64	
繰返回数	せん断ひずみ 振幅	$\gamma_{DA}=1.5\%$	8.5	0.9	0.5	0.7	0.9	0.7	0.5	0.5	0.5	42	200>	0.9
		$\gamma_{DA}=2.0\%$	18	5.5	0.7	0.9	6	1	0.7	0.7	0.7	200>	-	3.5
		$\gamma_{DA}=3.0\%$	30	26	1.5	2	35	12	1	1	1	-	-	15
		$\gamma_{DA}=7.5\%$	54	71	5	7	121	46	7	6	8.5	-	-	45
		$\gamma_{DA}=15\%$	-	-	-	-	127	53	-	-	12	-	-	-
間隙水圧比 95% $N_{u95}$		-	-	-	-	-	-	-	-	-	-	-	-	

     : 最大過剰間隙水圧比が 1.0 に近づく (0.95 を越えるもの)

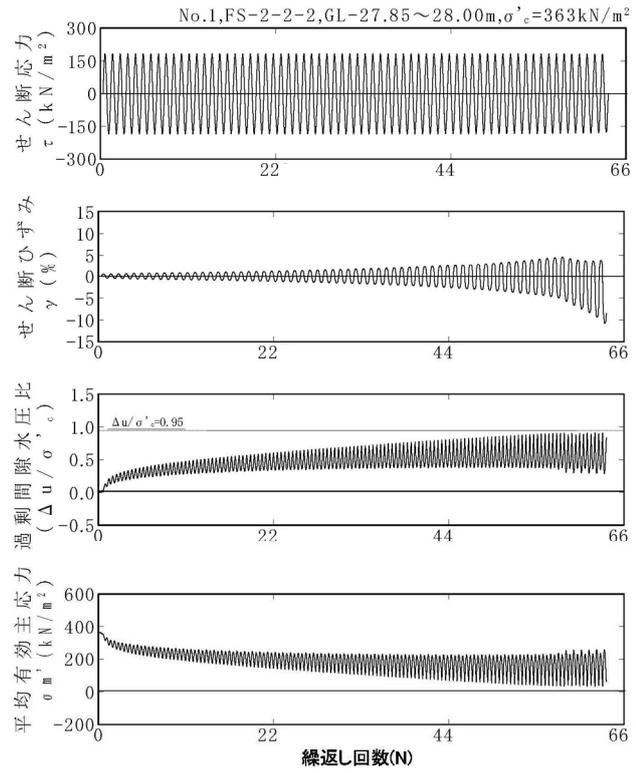
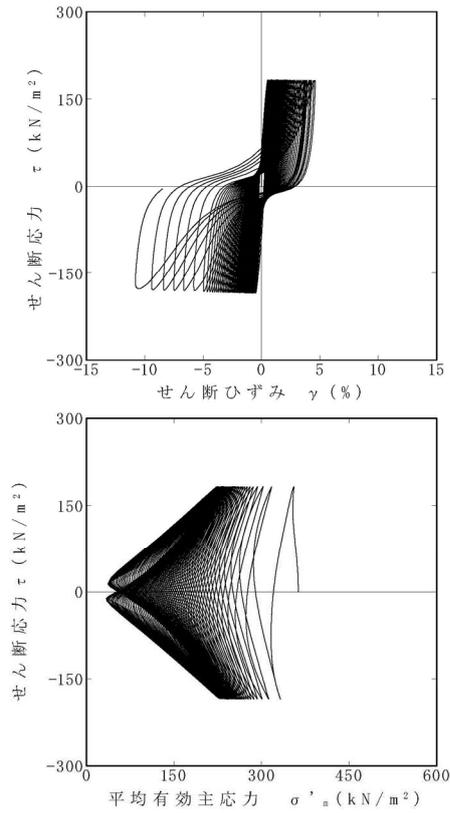


図 6-1-1 O-1 (洪積砂質土層 I) ( $\sigma'_c=363\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.51$ )

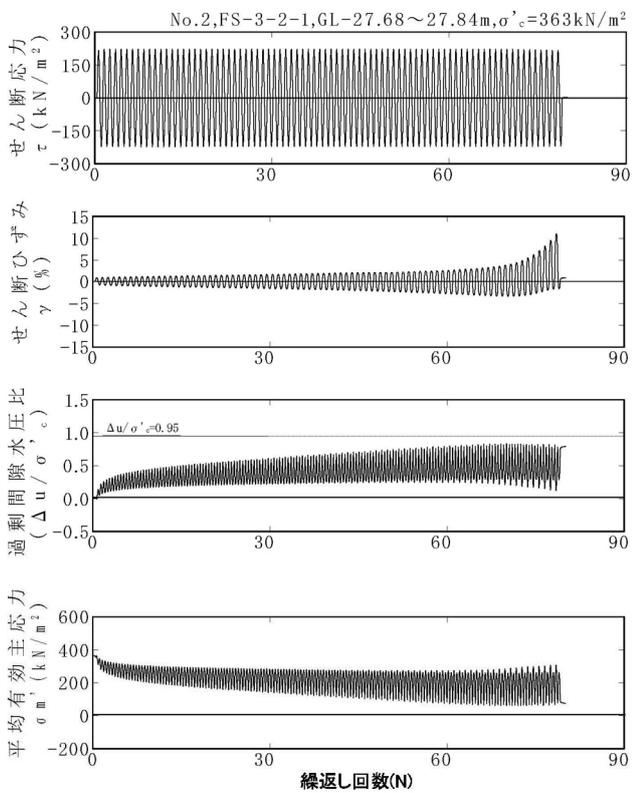
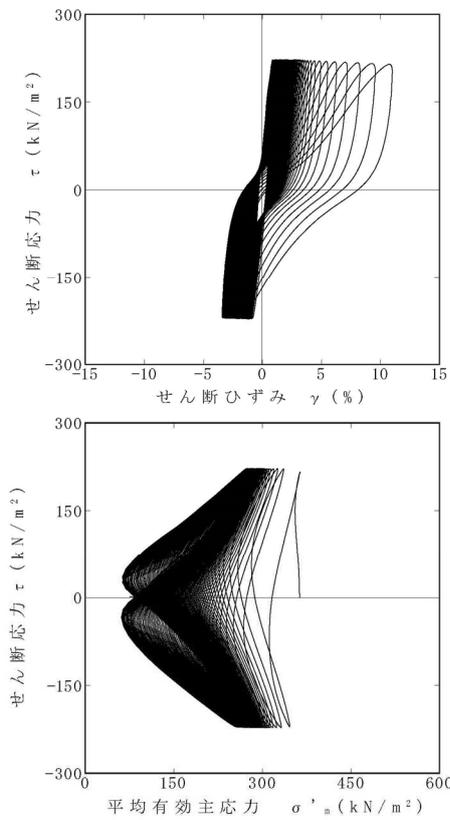


図 6-1-2 O-1 (洪積砂質土層 I) ( $\sigma'_c=363\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.60$ )

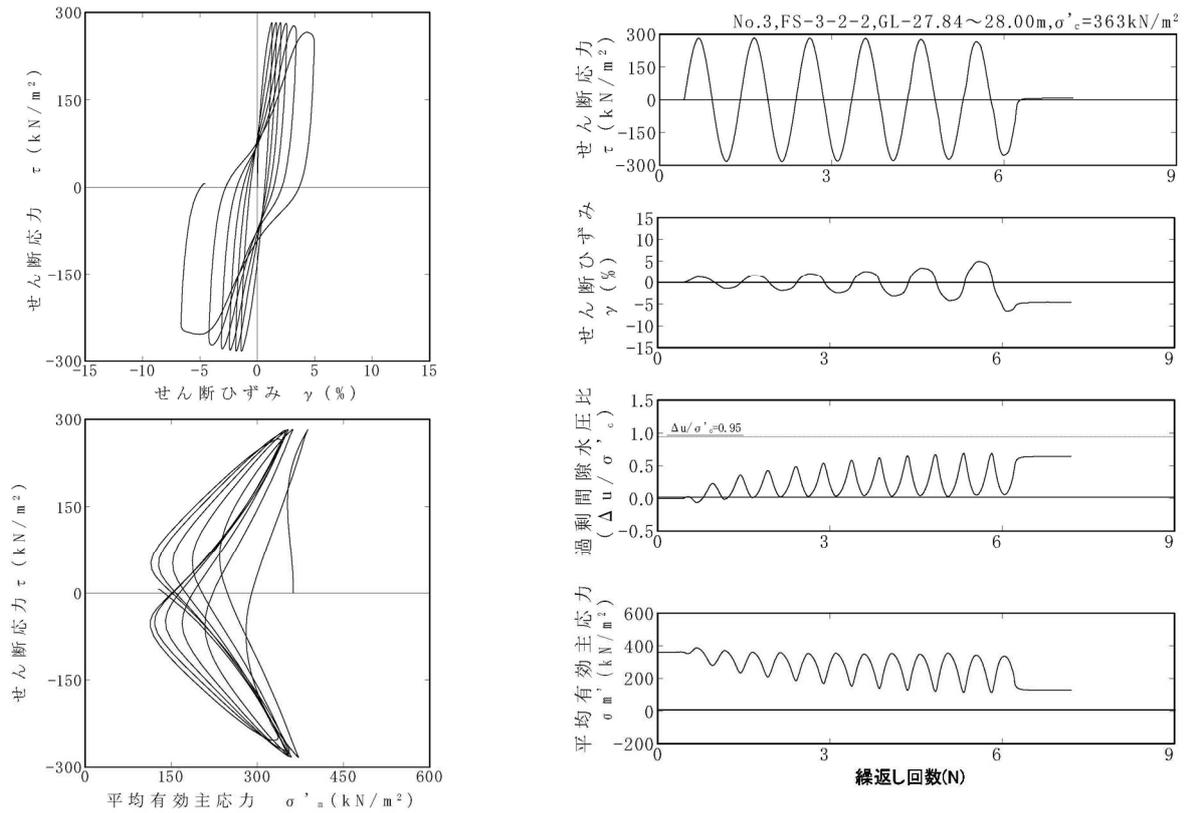


図 6-1-3 O-1 (洪積砂質土層 I) ( $\sigma'_c=363\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.78$ )

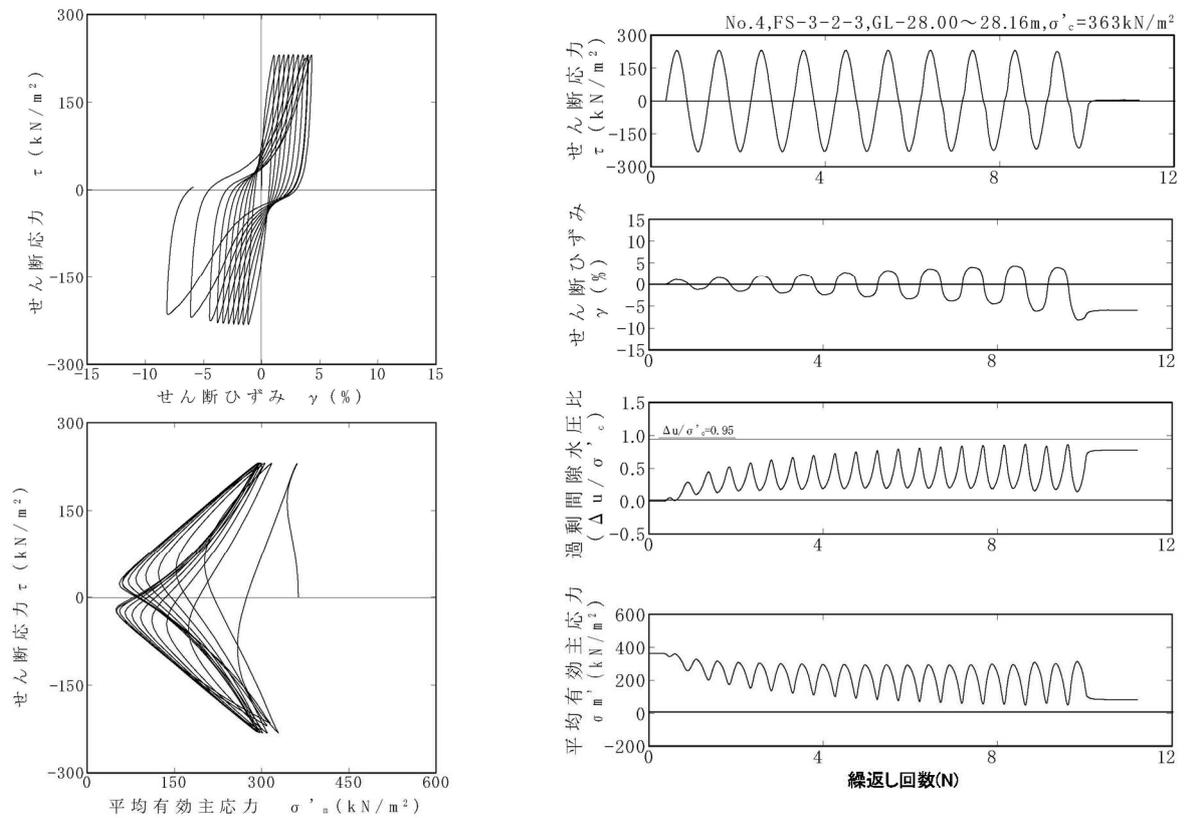


図 6-1-4 O-1 (洪積砂質土層 I) ( $\sigma'_c=363\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.64$ )

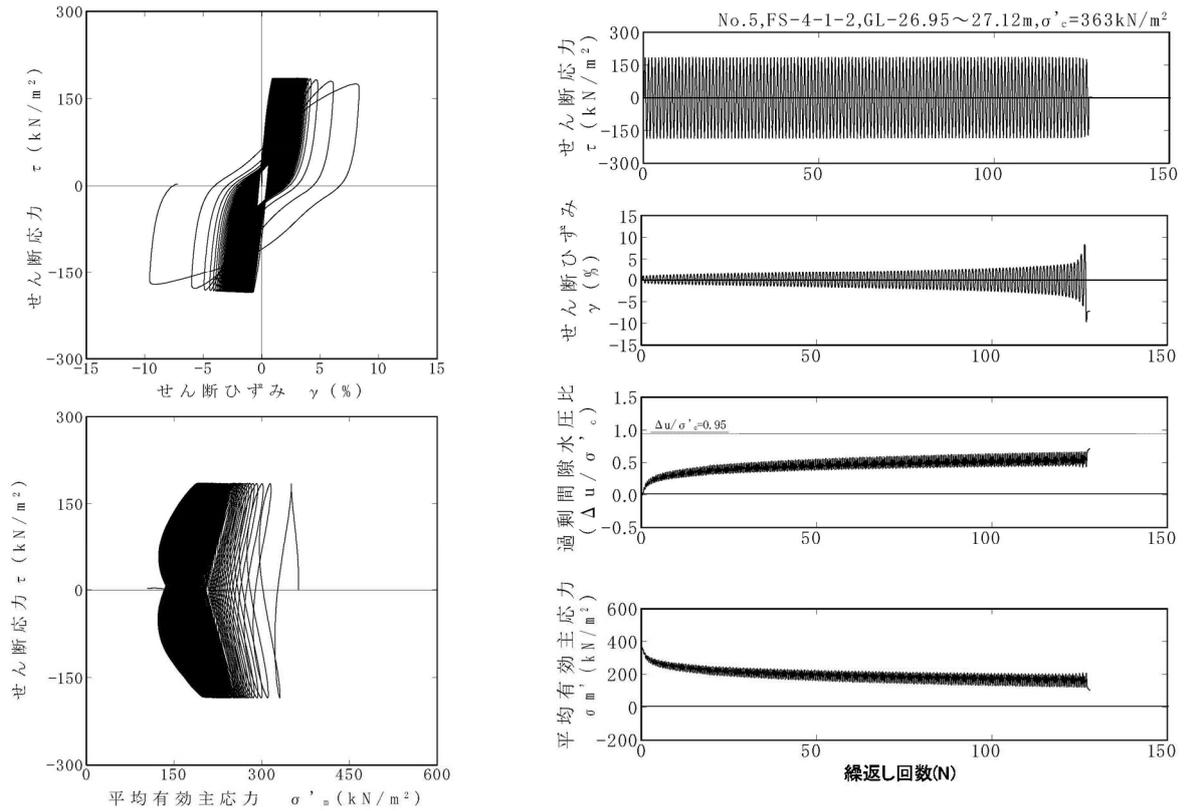


図 6-2-1 O-1 (洪積砂質土層 I) ( $\sigma'_c=363\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.51$ )

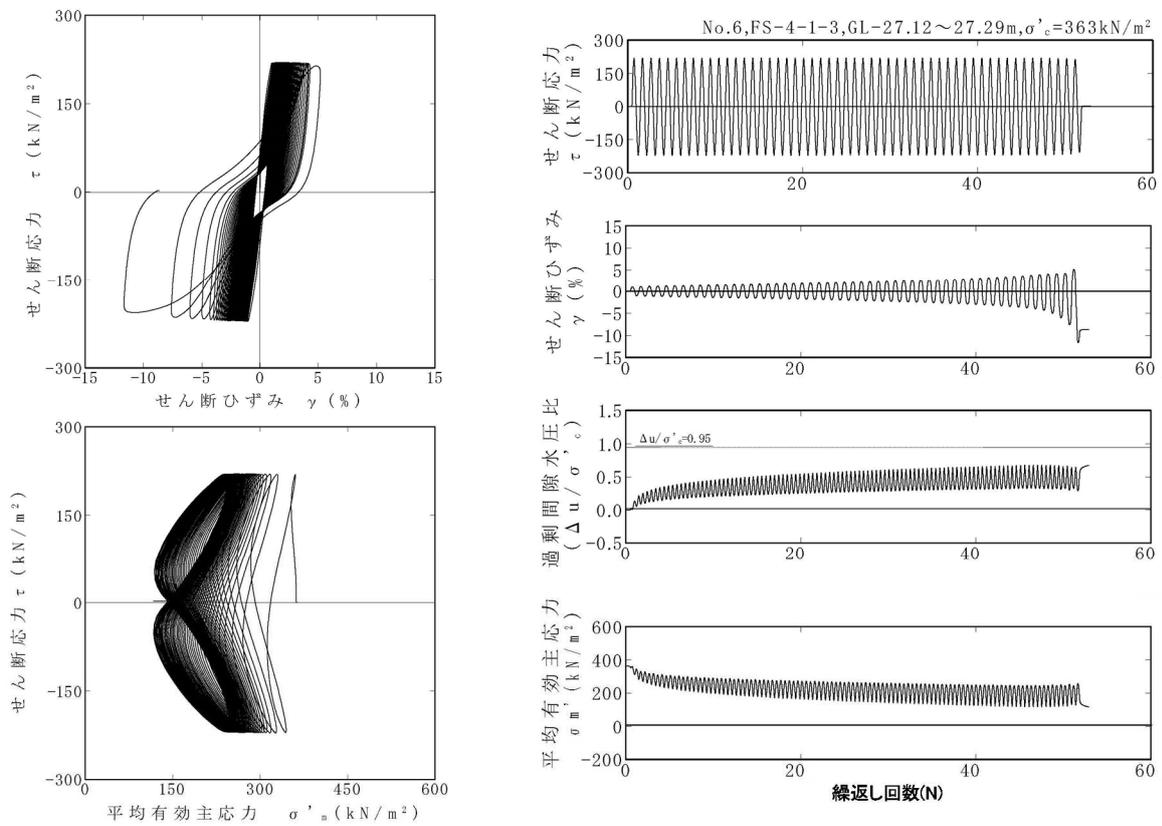


図 6-2-2 O-1 (洪積砂質土層 I) ( $\sigma'_c=363\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.61$ )

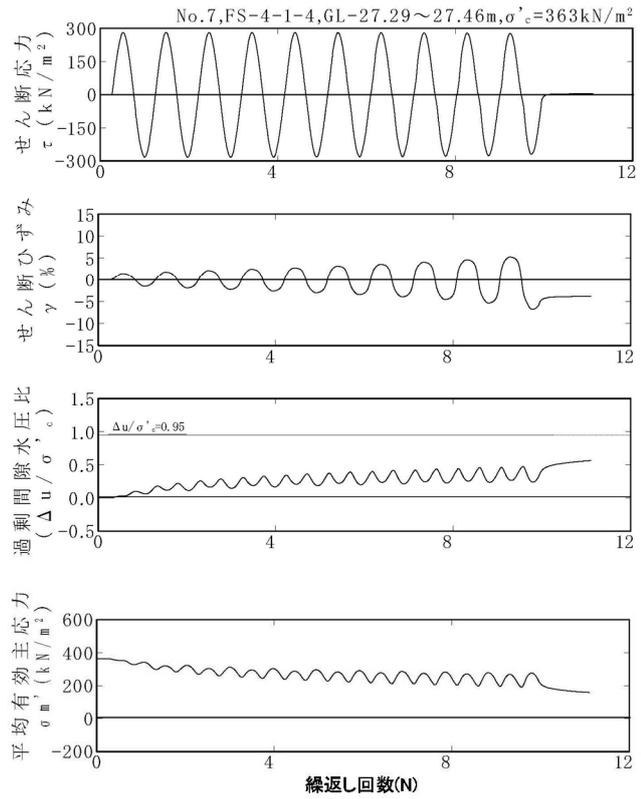
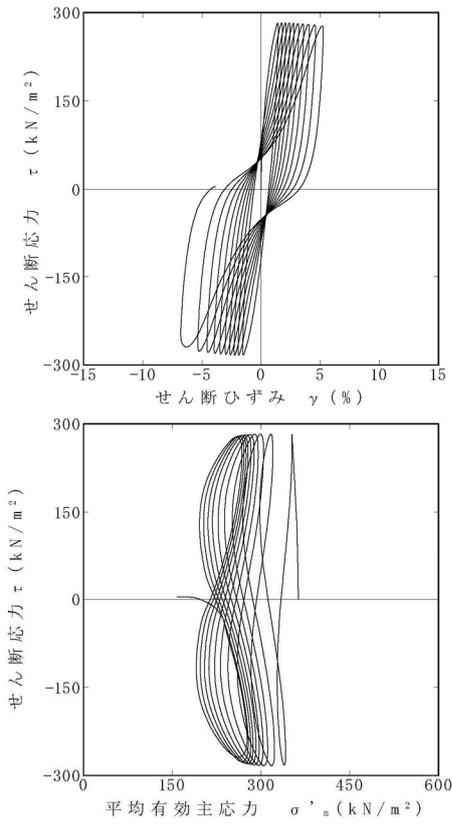


図 6-2-3 O-1 (洪積砂質土層 I) ( $\sigma'_c=363\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.78$ )

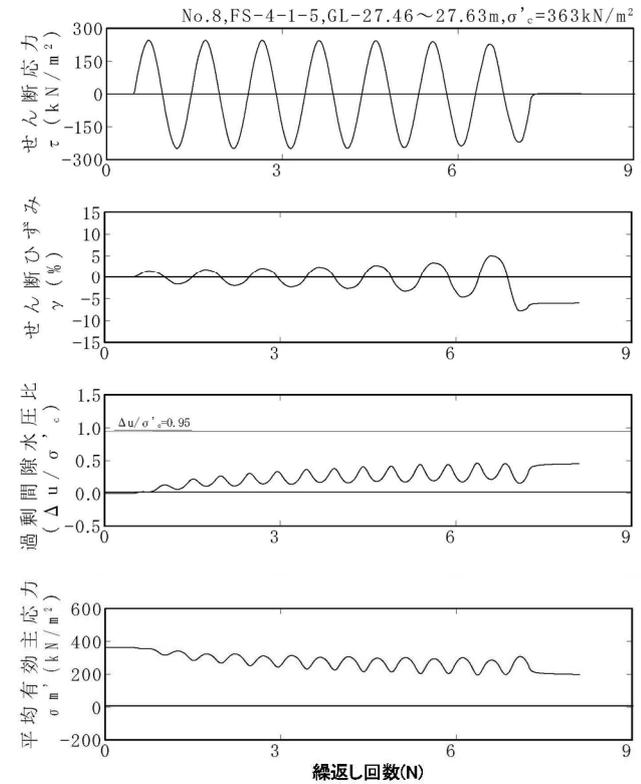
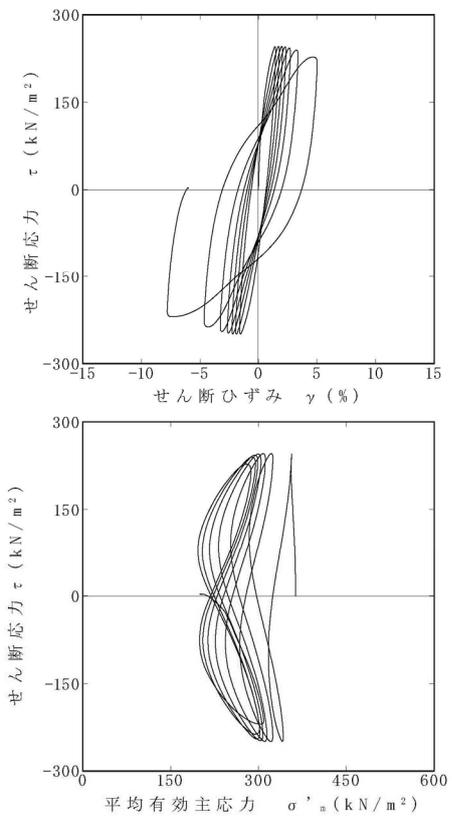


図 6-2-4 O-1 (洪積砂質土層 I) ( $\sigma'_c=363\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.68$ )

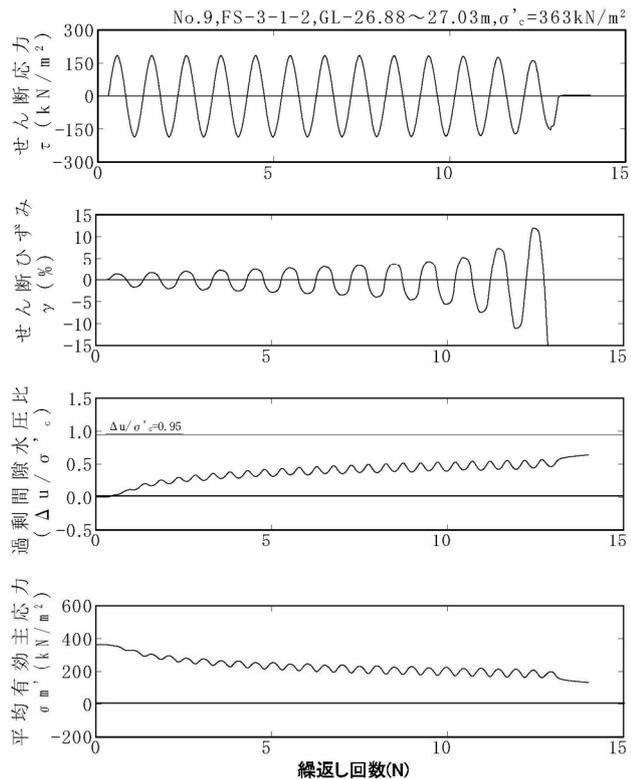
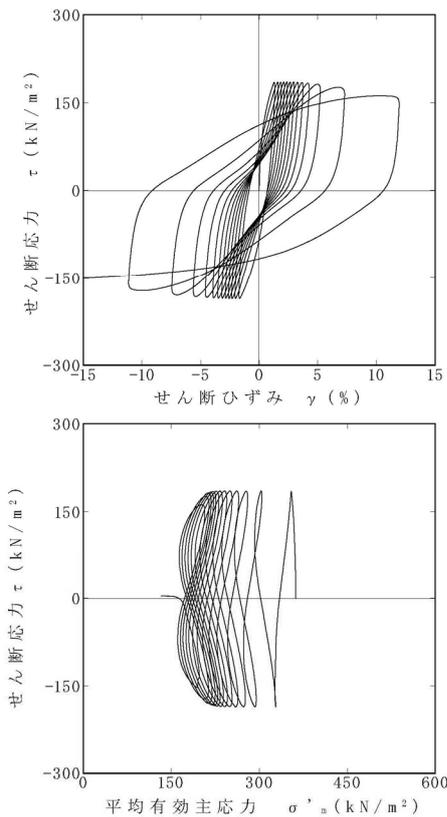


図 6-3-1 O-1 (洪積砂質土層 I) ( $\sigma'_c=363\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.51$ )

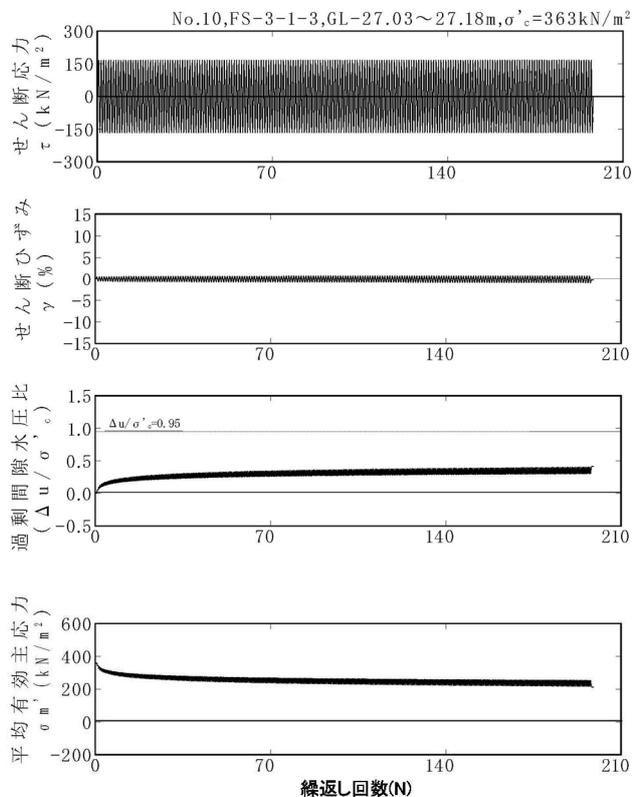
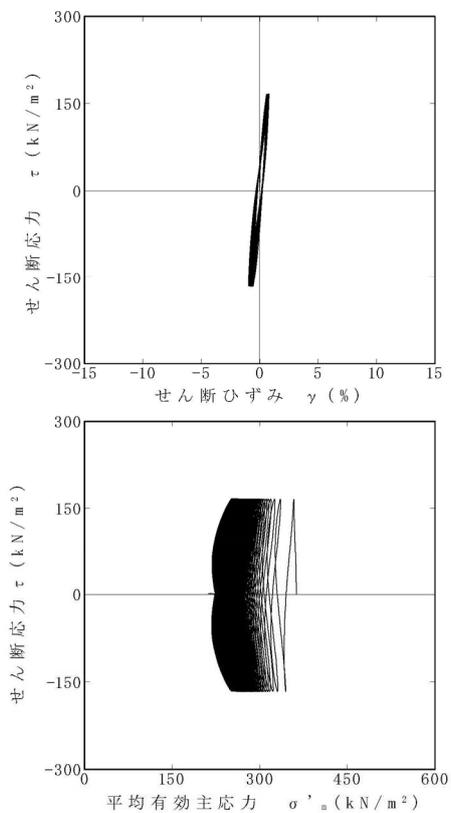


図 6-3-2 O-1 (洪積砂質土層 I) ( $\sigma'_c=363\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.46$ )

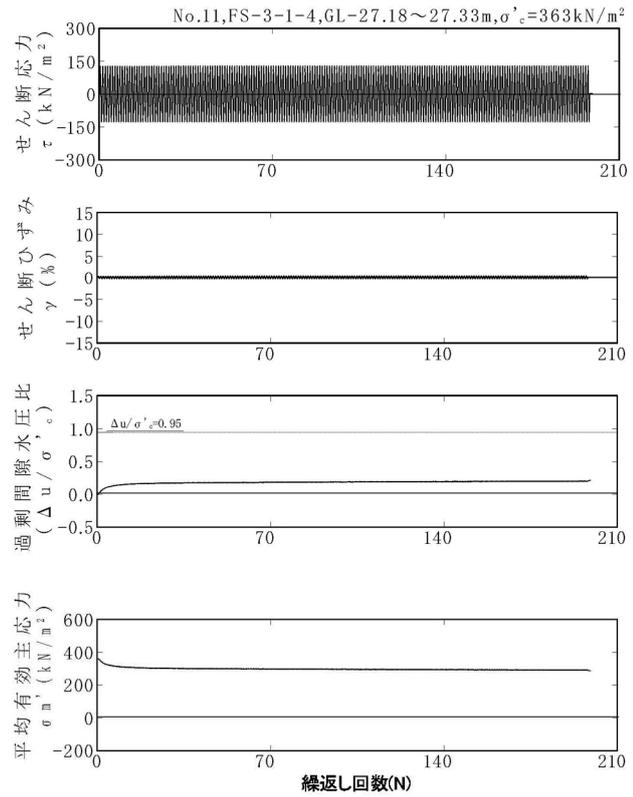
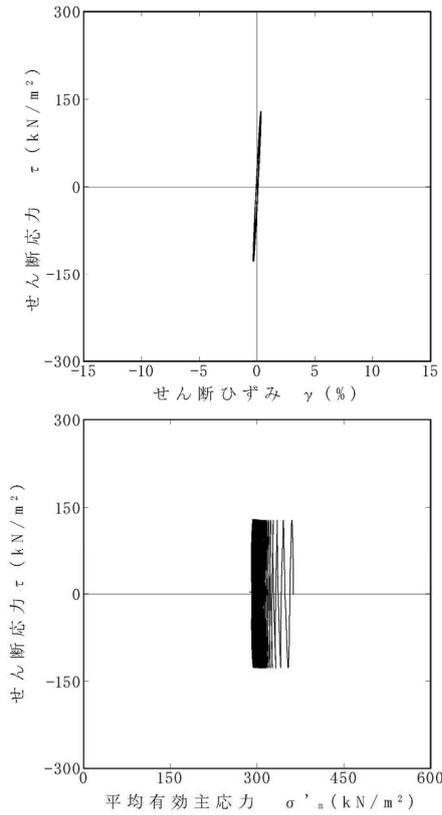


図 6-3-3 O-1 (洪積砂質土層 I) ( $\sigma'_c=363\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.35$ )

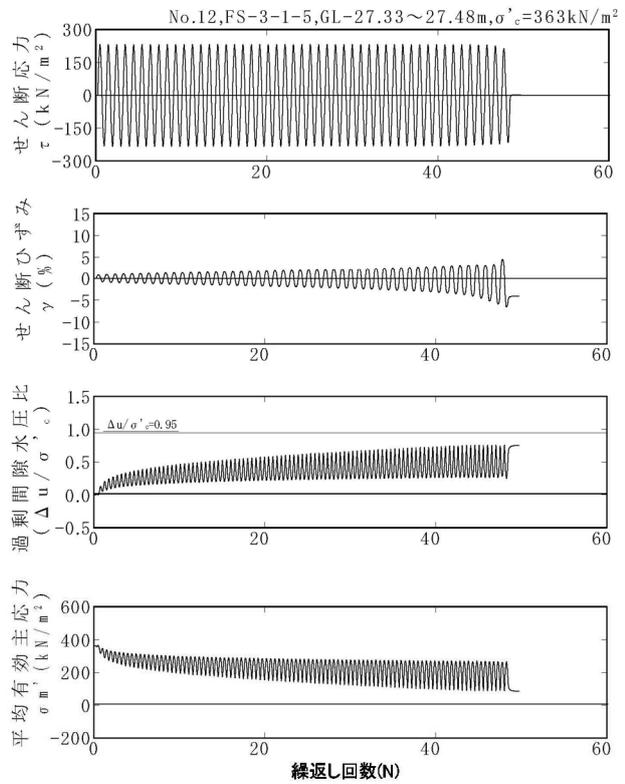
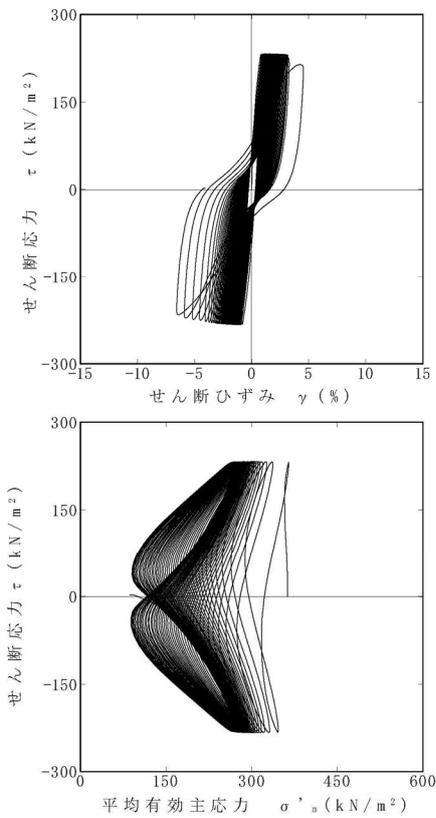


図 6-3-4 O-1 (洪積砂質土層 I) ( $\sigma'_c=363\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.64$ )

【O-1 (洪積砂質土層Ⅱ)】

試料番号		#6-2-1				#6-2-2				#6-2-3				
深度 G.L.- (m)		31.65~34.75				32.10~32.95				32.95~33.55				
土質材料		洪積砂質土層Ⅱ				洪積砂質土層Ⅱ				洪積砂質土層Ⅱ				
供試体 No.		1	2	3	4	1	2	3	4	1	2	3	4	
土粒子の密度 $\rho_s$ (g/cm <sup>3</sup> )		2.664				2.646				2.672				
圧密圧力 $\sigma_c'$ (kN/m <sup>2</sup> )		412				412				412				
せん断応力比 $\tau_d/\sigma_c'$		0.59	0.52	0.79	0.72	0.51	0.58	0.69	0.64	0.57	0.53	0.70	0.65	
繰返回数	せん断ひずみ 両振幅	$\gamma_{DA}=1.5\%$	1.5	6.5	0.3	0.7	5.5	0.8	0.6	1	1	2	0.7	0.9
		$\gamma_{DA}=2.0\%$	5	11	0.5	1	24	1.5	0.9	5.5	4	6	1	2
		$\gamma_{DA}=3.0\%$	13	19	1	5	61	7	2.5	17	14	15	3.5	5
		$\gamma_{DA}=7.5\%$	36	38	2	17	111	25	8.5	38	37	34	9.5	16
		$\gamma_{DA}=15\%$	-	-	-	-	116	30	-	-	43	43	11	-
間隙水圧比 95% $N_{u95}$		-	-	-	-	-	-	-	-	-	-	-	-	

■ : 最大過剰間隙水圧比が 1.0 に近づく (0.95 を越えるもの)

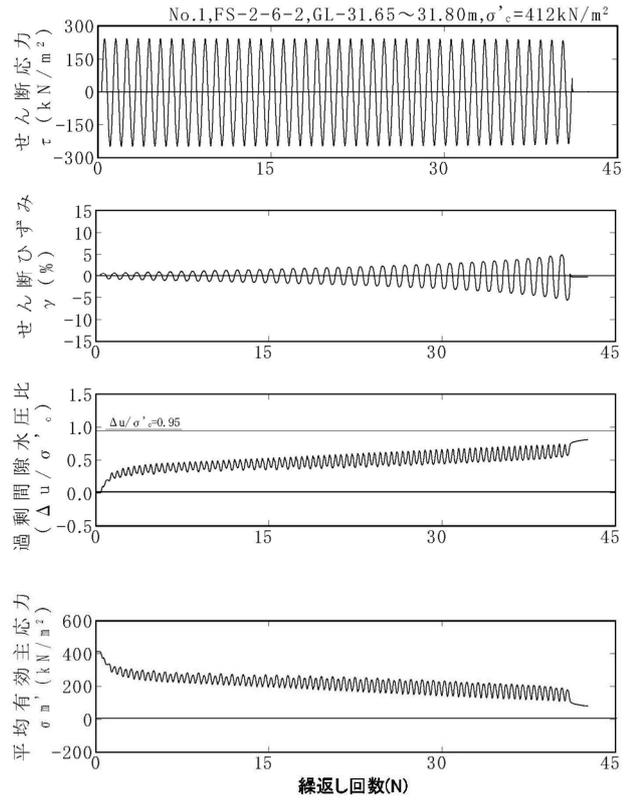
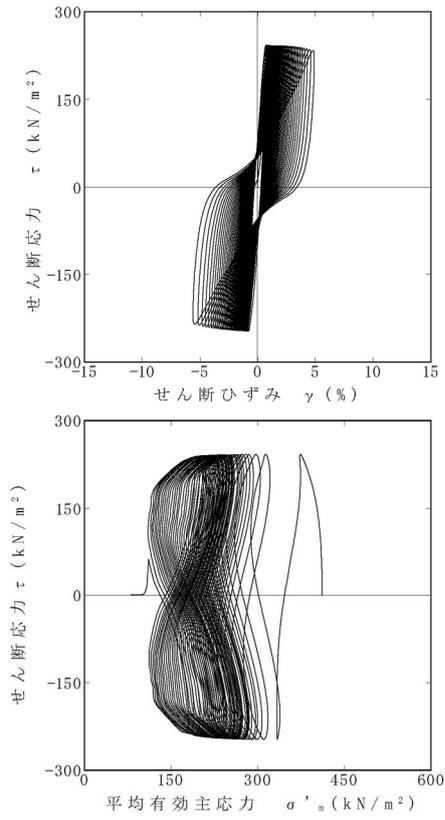


図 6-4-1 O-1 (洪積砂質土層Ⅱ) ( $\sigma'_c=412\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.59$ )

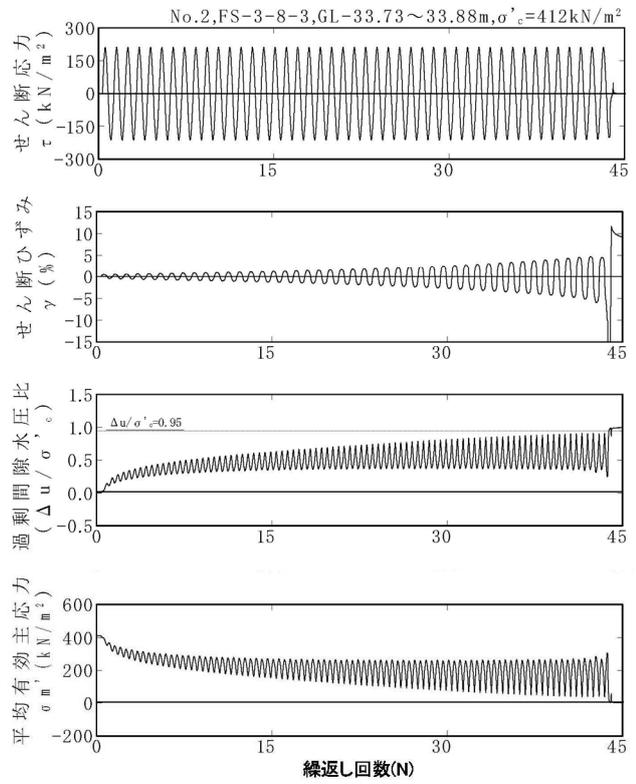
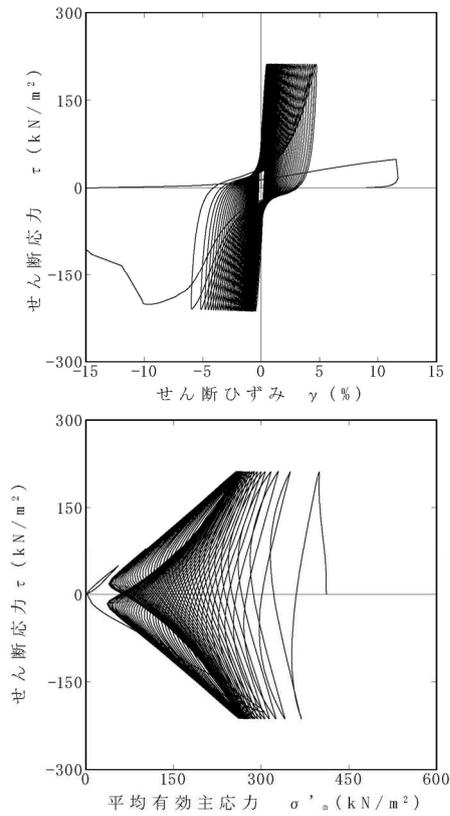


図 6-4-2 O-1 (洪積砂質土層Ⅱ) ( $\sigma'_c=412\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.52$ )

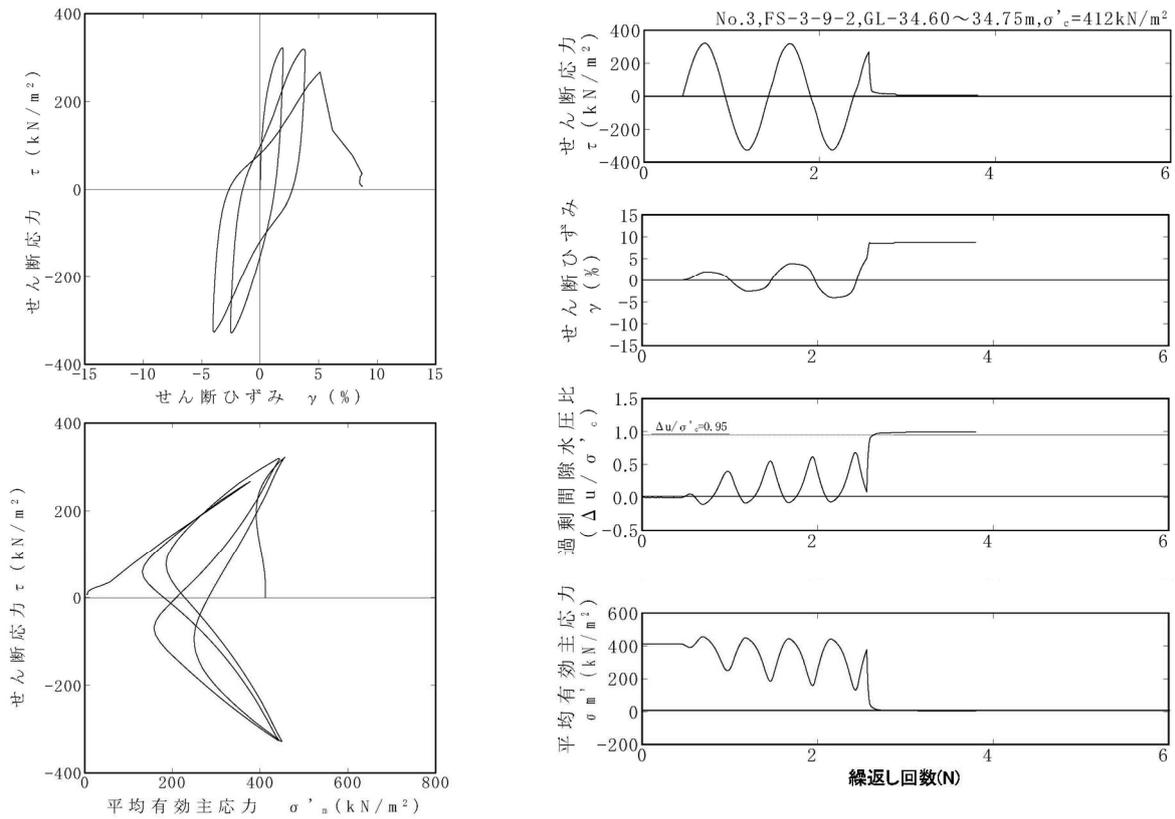


図 6-4-3 O-1 (洪積砂質土層Ⅱ) ( $\sigma'_{e}=412\text{kN/m}^2$ ,  $\tau_d/\sigma'_{e}=0.79$ )

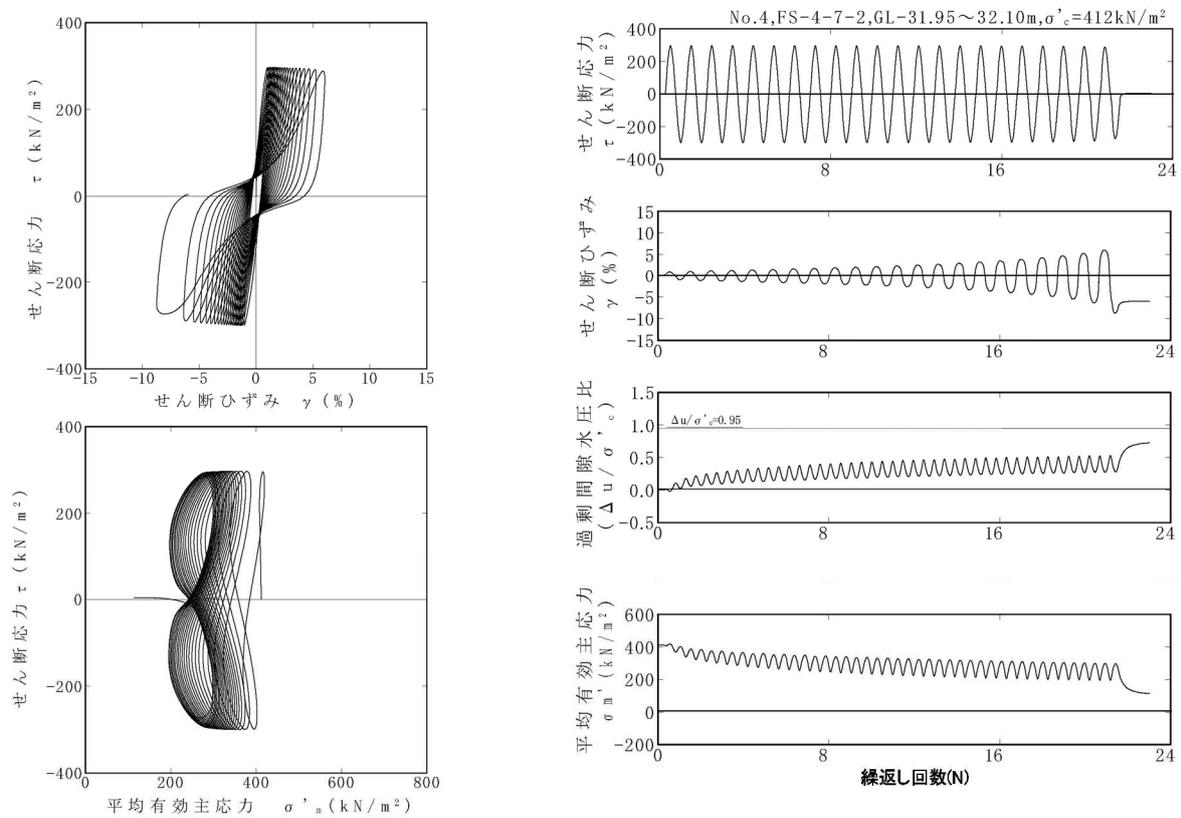


図 6-4-4 O-1 (洪積砂質土層Ⅱ) ( $\sigma'_{e}=412\text{kN/m}^2$ ,  $\tau_d/\sigma'_{e}=0.72$ )

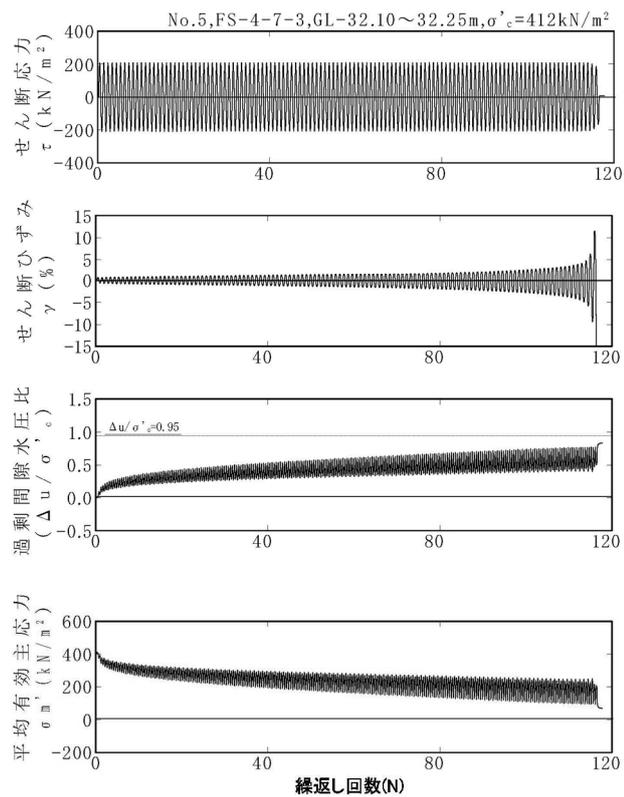
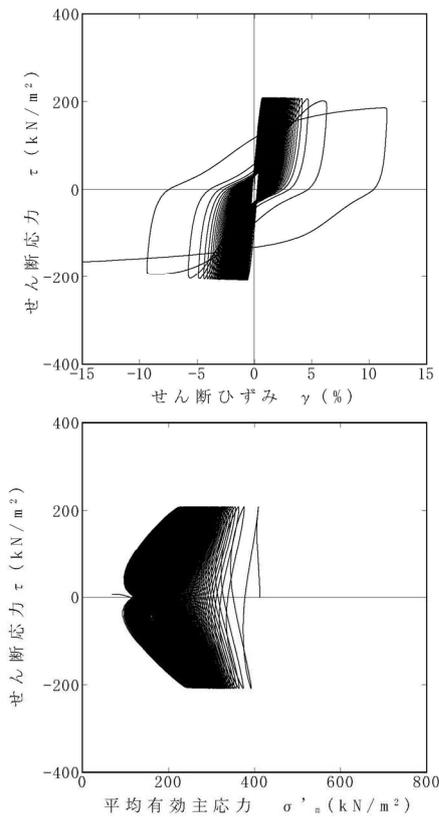


図 6-5-1 O-1 (洪積砂質土層Ⅱ) ( $\sigma'_c=412\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.51$ )

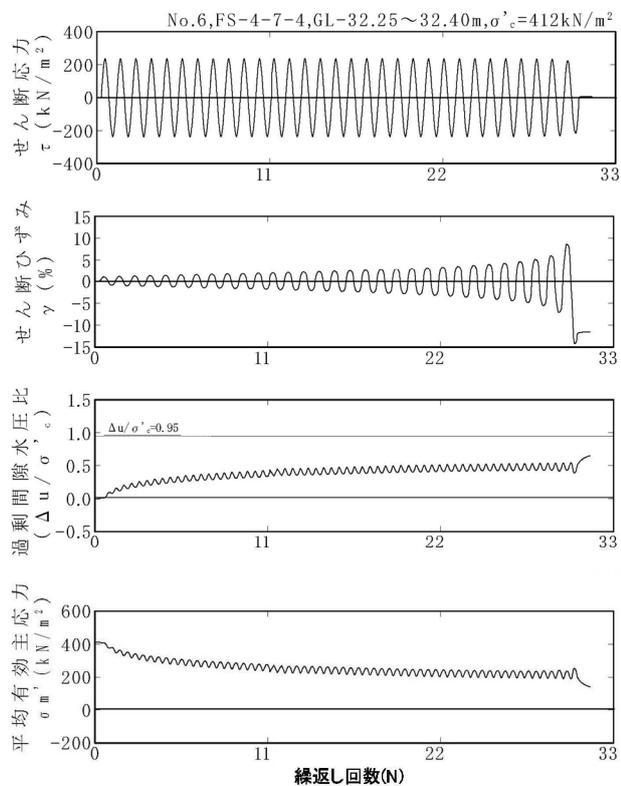
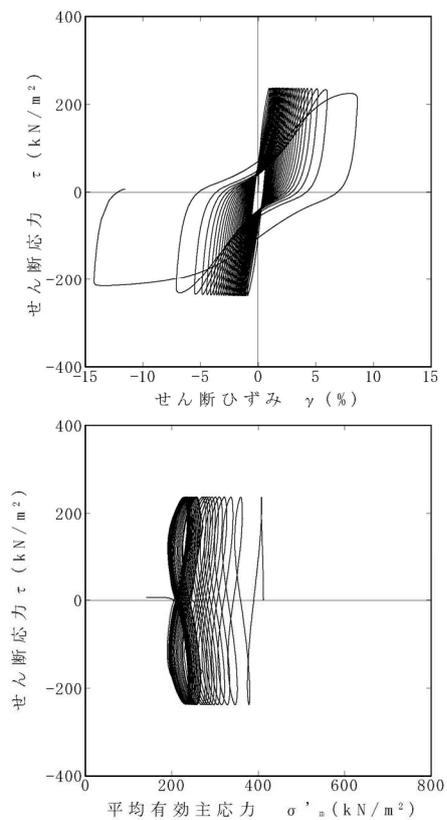


図 6-5-2 O-1 (洪積砂質土層Ⅱ) ( $\sigma'_c=412\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.58$ )

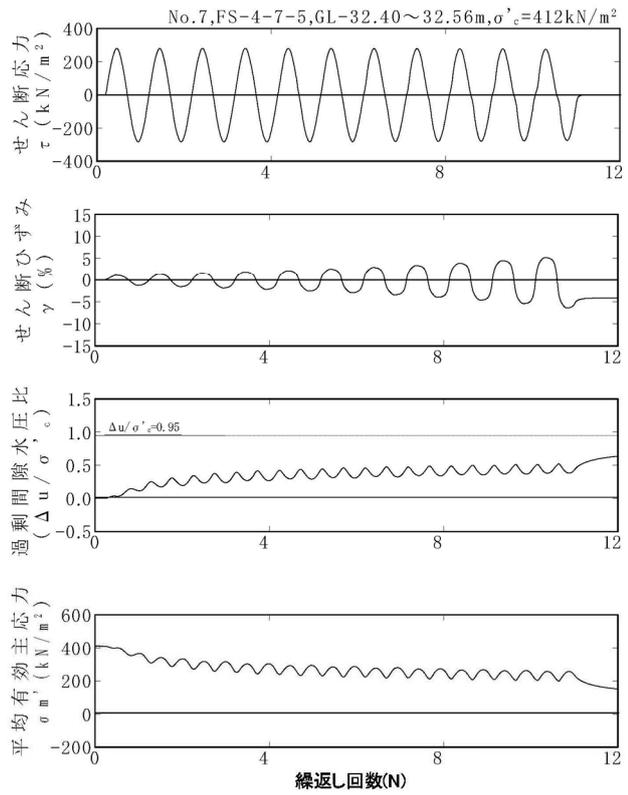
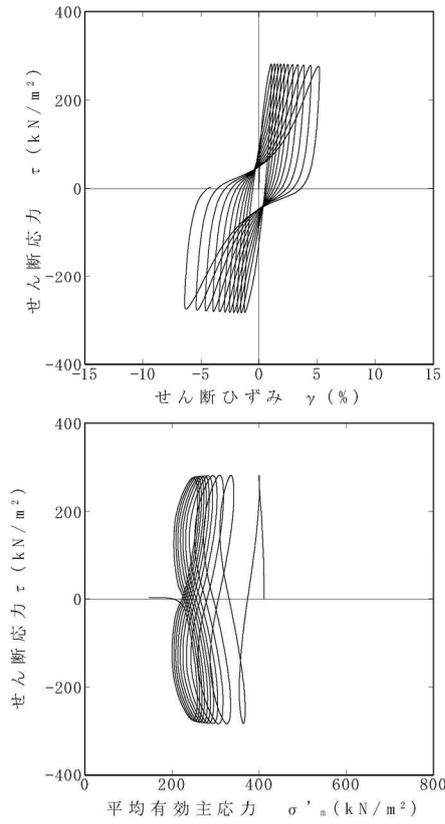


図 6-5-3 O-1 (洪積砂質土層Ⅱ) ( $\sigma'_c=412\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.69$ )

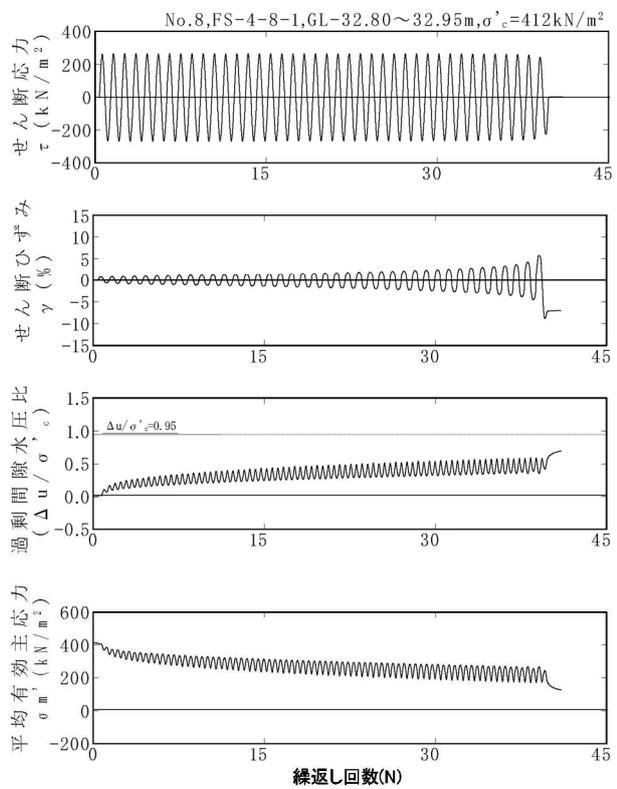
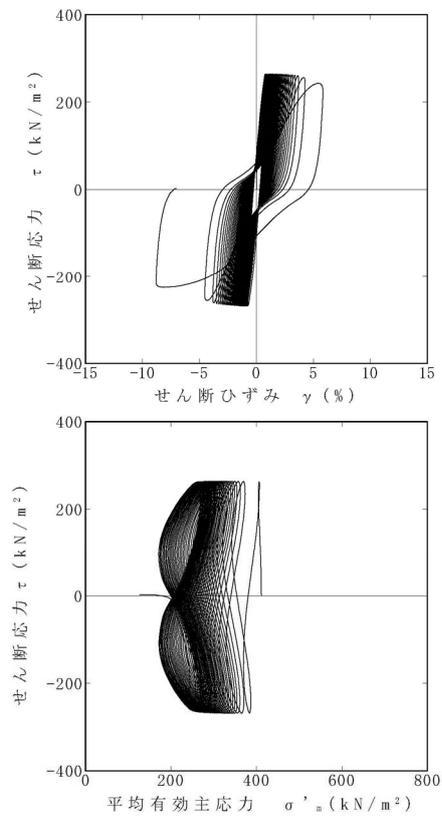


図 6-5-4 O-1 (洪積砂質土層Ⅱ) ( $\sigma'_c=412\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.64$ )

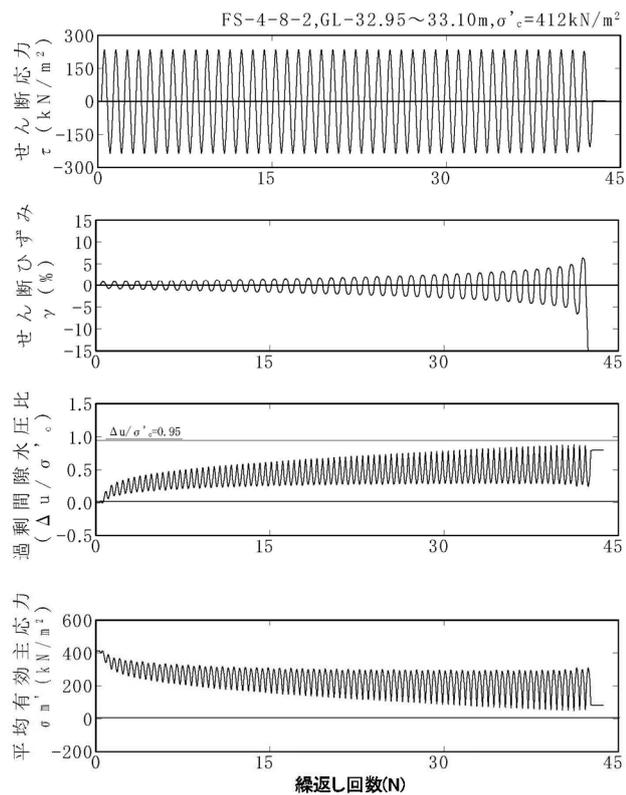
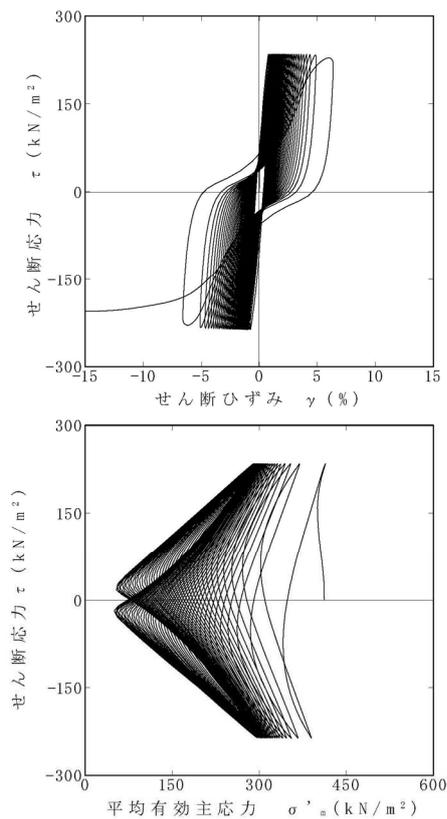


図 6-6-1 O-1 (洪積砂質土層Ⅱ) ( $\sigma'_c=412\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.57$ )

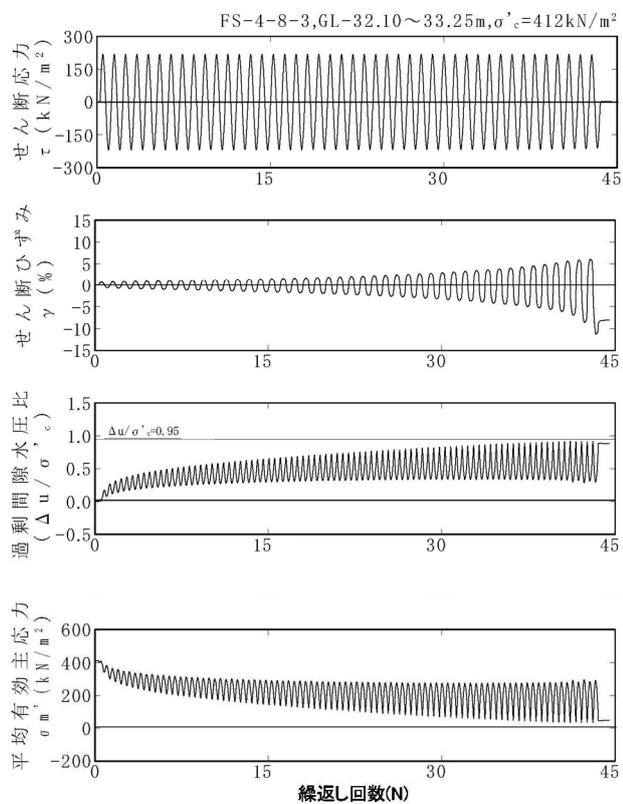
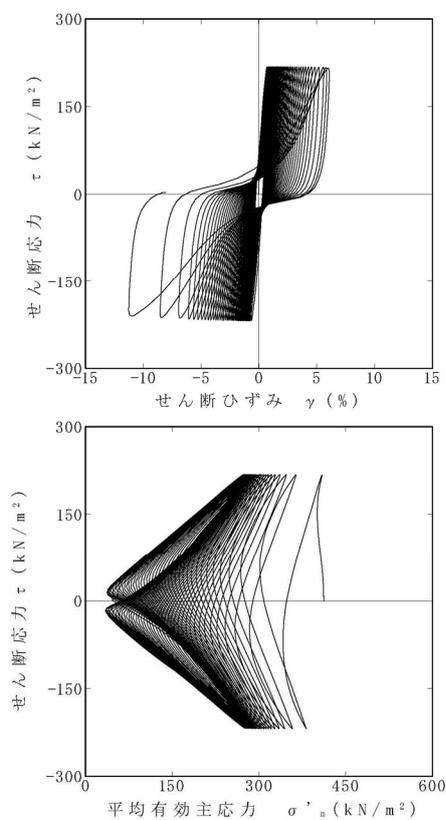


図 6-6-2 O-1 (洪積砂質土層Ⅱ) ( $\sigma'_c=412\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.53$ )

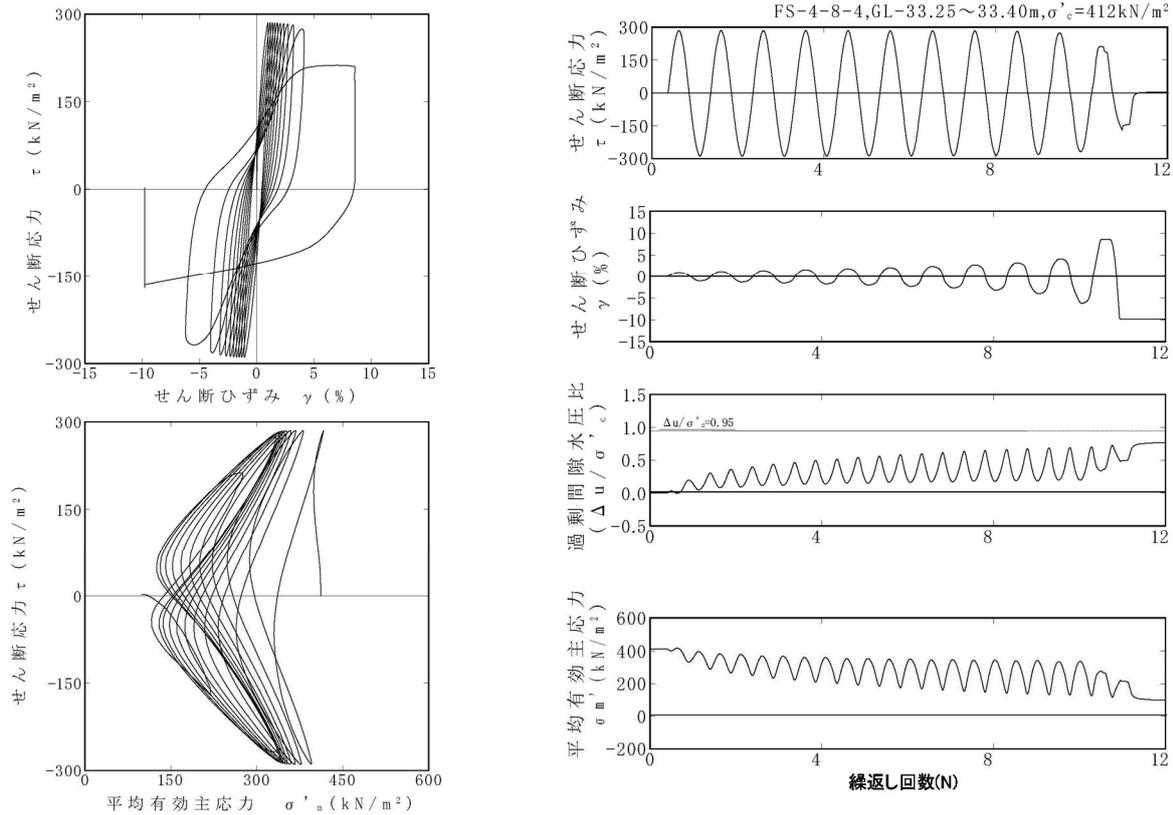


図 6-6-3 O-1 (洪積砂質土層Ⅱ) ( $\sigma'_c=412\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.70$ )

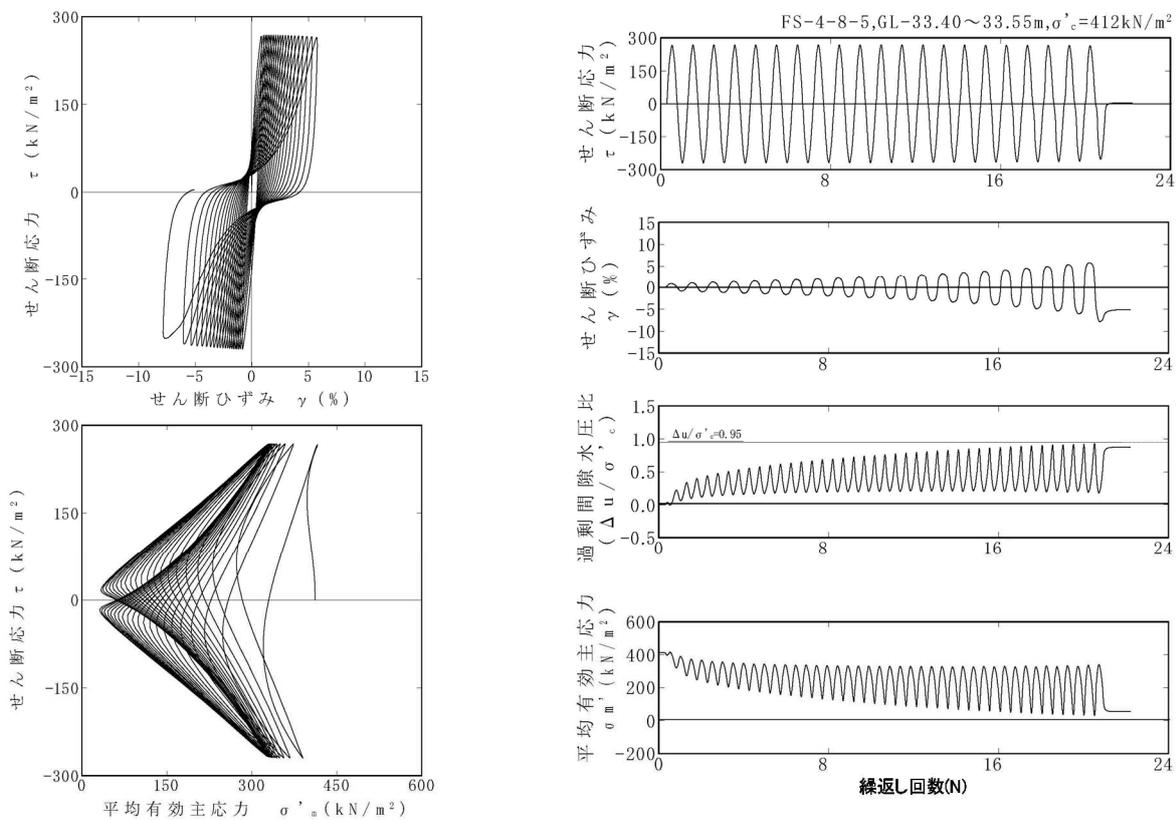


図 6-6-4 O-1 (洪積砂質土層Ⅱ) ( $\sigma'_c=412\text{kN/m}^2$ ,  $\tau_d/\sigma'_c=0.65$ )