

ASE 375 Electromechanical Systems Section 14115

Monday: 3:00 - 6:00 pm

Report 3: Measuring Displacement

Andrew Doty, Andres Suniaga, Dennis Hom Due Date: 02/12/2024

Contents

1	Introduction	2
2	Equipment	2
3	Procedure	2
4	Data Processing	2
5	Results and Analysis	2
6	Conclusion	2

ASE375 Lab Report 3

- 1 Introduction
- 2 Equipment
- 3 Procedure
- 4 Data Processing
- 5 Results and Analysis
- 6 Conclusion



Appendix: t-Distribution Tables

Table A11. t-Distribution

Values of z for given values of the distribution function F(z) (cf. p. 754).

Example: For 9 degrees of freedom, z = 1.83 when F(z) = 0.95.

		Number of Degrees of Freedom								
F(z)	1	2	3	4	5	6	7	8	9	10
0.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.6	0.33	0.29	0.28	0.27	0.27	0.27	0.26	0.26	0.26	0.26
0.7	0.73	0.62	0.58	0.57	0.56	0.55	0.55	0.55	0.54	0.54
0.8	1.38	1.06	0.98	0.94	0.92	0.91	0.90	0.89	0.88	0.88
0.9	3.08	1.89	1.64	1.53	1.48	1.44	1.42	1.40	1.38	1.37
0.95	6.31	2.92	2.35	2.13	2.02	1.94	1.90	1.86	1.83	1.81
0.975	12.7	4.30	3.18	2.78	2.57	2.45	2.37	2.31	2.26	2.23
0.99	31.8	6.97	4.54	3.75	3.37	3.14	3.00	2.90	2.82	2.76
0.995	63.7	9.93	5.84	4.60	4.03	3.71	3.50	3.36	3.25	3.17
0.999	318.3	22.3	10.2	7.17	5.89	5.21	4.79	4.50	4.30	4.14

	Number of Degrees of Freedom								Number of Degrees of Freedom			
F(z)	- 11	12	13	14	15	16	17	18	19	20		
0.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.6	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26		
0.7	0.54	0.54	0.54	0.54	0.54	0.54	0.53	0.53	0.53	0.53		
0.8	0.88	0.87	0.87	0.87	0.87	0.87	0.86	0.86	0.86	0.86		
0.9	1.36	1.36	1.35	1.35	1.34	1.34	1.33	1.33	1.33	1.33		
0.95	1.80	1.78	1.77	1.76	1.75	1.75	1.74	1.73	1.73	1.73		
0.975	2.20	2.18	2.16	2.15	2.13	2.12	2.11	2.10	2.09	2.09		
0.99	2.72	2.68	2.65	2.62	2.60	2.58	2.57	2.55	2.54	2.53		
0.995	3.11	3.06	3.01	2.98	2.95	2.92	2.90	2.88	2.86	2.85		
0.999	4.03	3.93	3.85	3.79	3.73	3.69	3.65	3.61	3.58	3.55		

	Number of Degrees of Freedom									
F(z)	22	24	26	28	30	40	50	100	200	ø.
0.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.6	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.25	0.25	0.25
0.7	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.52
0.8	0.86	0.86	0.86	0.86	0.85	0.85	0.85	0.85	0.84	0.84
0.9	1.32	1.32	1.32	1.31	1.31	1.30	1.30	1.29	1.29	1.28
0.95	1.72	1.71	1.71	1.70	1.70	1.68	1.68	1.66	1.65	1.65
0.975	2.07	2.06	2.06	2.05	2.04	2.02	2.01	1.98	1.97	1.96
0.99	2.51	2.49	2.48	2.47	2.46	2.42	2.40	2.37	2.35	2.33
0.995	2.82	2.80	2.78	2.76	2.75	2.70	2.68	2.63	2.60	2.58
0.999	3.51	3.47	3.44	3.41	3.39	3.31	3.26	3.17	3.13	3.09