

標準大気 (高度20,000m迄) (1/2) (第3版 航空宇宙工学便覧, 日本航空宇宙学会, 丸善株式会社, pp.8-10, 2005年)

幾何高度 Z		ジオポテンシャル高度 H	温度 T	温度 t	気圧 P	P/P_0	密度 ρ	ρ/ρ_0	音速 a_s	動粘性係数 ν	熱伝導率 λ
m	ft	m	K	℃	mbar		kg/m ³		m/s	m ² /s	W/(m·K)
-1000	-3281	-1000	294.651	21.501	1.13931 ⁺³	1.12441 ⁺⁰	1.34702 ⁺⁰	1.09960 ⁺⁰	344.111	1.3516 ⁻⁵	2.5853 ⁻²
-900	-2953	-900	294.001	20.851	1.12616	1.11143	1.08932	1.08932	343.731	1.3502	2.5802
-800	-2625	-800	293.351	20.201	1.11313	1.09858	1.32190	1.07910	343.351	1.3725	2.5751
-700	-2297	-700	292.701	19.551	1.10023	1.08584	1.30947	1.06896	342.970	1.3832	2.5700
-600	-1969	-600	292.050	18.900	1.08744	1.07322	1.29714	1.05889	342.589	1.3939	2.5649
-500	-1641	-500	291.400	18.250	1.07478 ⁺³	1.06073 ⁺⁰	1.28490 ⁺⁰	1.04889 ⁺⁰	342.208	1.4048 ⁻⁵	2.5598 ⁻²
-400	-1312	-400	290.750	17.600	1.06224	1.04835	1.27274	1.03897	341.826	1.4158	2.5547
-300	-984	-300	290.100	16.950	1.04981	1.03609	1.26067	1.02912	341.444	1.4268	2.5496
-200	-656	-200	289.450	16.300	1.03751	1.02394	1.24869	1.01934	341.061	1.4380	2.5445
-100	-328	-100	288.800	15.650	1.02532	1.01191	1.23680	1.00964	340.678	1.4493	2.5394
0	0	0	288.150	15.000	1.01325 ⁺³	1.00000 ⁺⁰	1.22500 ⁺⁰	1.00000 ⁺⁰	340.294	1.4607 ⁻⁵	2.5343 ⁻²
100	328	100	287.500	14.350	1.00129	0.988201 ⁻¹	1.21328	0.99435 ⁻¹	339.910	1.4722	2.5292
200	656	200	286.850	13.700	0.989454 ⁺²	0.976515	1.20165	0.980941	339.526	1.4839	2.5241
300	984	300	286.200	13.050	0.977727	0.964942	1.19011	0.971516	339.141	1.4956	2.5189
400	1312	400	285.550	12.400	0.966114	0.953480	1.17865	0.962161	338.755	1.5075	2.5138
500	1641	500	284.900	11.750	0.954613 ⁺²	0.942130 ⁻¹	1.16727 ⁺⁰	0.952876 ⁻¹	338.370	1.5195 ⁻⁵	2.5087 ⁻²
600	1969	600	284.250	11.100	0.943223	0.930889	1.15598	0.943660	337.983	1.5316	2.5035
700	2297	700	283.601	10.451	0.931944	0.919757	1.14478	0.934512	337.597	1.5438	2.4984
800	2625	800	282.951	9.801	0.920775	0.908734	1.13366	0.925433	337.210	1.5562	2.4933
900	2953	900	282.301	9.151	0.909715	0.907819	1.12261	0.916421	336.822	1.5687	2.4881
1000	3281	1000	281.651	8.501	0.908763 ⁺²	0.87010 ⁻¹	1.11166 ⁺⁰	0.907477 ⁻¹	336.435	1.5813 ⁻⁵	2.4830 ⁻²
1100	3609	1100	281.001	7.851	0.87918	0.876307	1.10079	0.90601	336.046	1.5940	2.4779
1200	3937	1200	280.351	7.201	0.877180	0.865709	1.08999	0.89791	335.658	1.6069	2.4727
1300	4265	1300	279.702	6.552	0.866548	0.855216	1.07928	0.881047	335.268	1.6199	2.4675
1400	4593	1400	279.052	5.902	0.856020	0.844826	1.06865	0.872370	334.879	1.6330	2.4624
1500	4922	1500	278.402	5.252	0.845597 ⁺²	0.834539 ⁻¹	1.05810 ⁺⁰	0.863759 ⁻¹	334.489	1.6463 ⁻⁵	2.4572 ⁻²
1600	5250	1600	277.753	4.603	0.835277	0.824354	1.04764	0.855213	334.098	1.6597	2.4521
1700	5578	1700	277.103	3.953	0.825059	0.814270	1.03725	0.846732	333.707	1.6733	2.4469
1800	5906	1799	276.453	3.303	0.814943	0.804287	1.02694	0.838316	333.316	1.6869	2.4417
1900	6234	1899	275.804	2.654	0.804929	0.794403	1.01671	0.829964	332.924	1.7008	2.4366
2000	6562	1999	275.154	2.004	0.795014 ⁺²	0.784618 ⁻¹	1.00655 ⁺⁰	0.821676 ⁻¹	332.532	1.7147 ⁻⁵	2.4314 ⁻²
2100	6890	2099	274.505	1.355	0.785199	0.774931	0.996479 ⁻¹	0.813453	332.139	1.7289	2.4262
2200	7218	2199	273.855	0.705	0.775483	0.765342	0.986483	0.805292	331.746	1.7431	2.4210
2300	7546	2299	273.205	0.055	0.765864	0.755849	0.976563	0.797195	331.352	1.7575	2.4159
2400	7874	2399	272.556	-0.594	0.756342	0.746452	0.966721	0.789160	330.958	1.7721	2.4107
2500	8203	2499	271.906	-1.244	0.746917 ⁺²	0.737150 ⁻¹	0.956954 ⁻¹	0.781187 ⁻¹	330.563	1.7868 ⁻⁵	2.4055 ⁻²
2600	8531	2599	271.257	-1.893	0.737588	0.727943	0.947264	0.773277	330.168	1.8017	2.4003
2700	8859	2699	270.607	-2.543	0.728353	0.718829	0.937649	0.765428	329.773	1.8167	2.3951
2800	9187	2799	269.958	-3.192	0.719213	0.709808	0.928110	0.757641	329.377	1.8319	2.3899
2900	9515	2899	269.309	-3.841	0.710166	0.700879	0.918645	0.749914	328.980	1.8473	2.3847
3000	9843	2999	268.659	-4.491	0.701212 ⁺²	0.692402 ⁻¹	0.909254 ⁻¹	0.742248 ⁻¹	328.584	1.8628 ⁻⁵	2.3795 ⁻²
3100	10171	3098	268.010	-5.140	0.692349	0.683295	0.899938	0.734643	328.186	1.8785	2.3743
3200	10499	3198	267.360	-5.790	0.683578	0.674639	0.890694	0.727097	327.788	1.8943	2.3691
3300	10827	3298	266.711	-6.439	0.674897	0.666071	0.881524	0.719612	327.390	1.9104	2.3638
3400	11155	3398	266.062	-7.088	0.666306	0.657593	0.872427	0.712185	326.991	1.9266	2.3586
3500	11483	3498	265.413	-7.737	0.657804 ⁺²	0.649202 ⁻¹	0.863402 ⁻¹	0.704818 ⁻¹	326.592	1.9429 ⁻⁵	2.3534 ⁻²
3600	11811	3598	264.763	-8.387	0.649390	0.640898	0.854449	0.697509	326.192	1.9595	2.3482
3700	12139	3698	264.114	-9.036	0.641064	0.632681	0.845567	0.690259	325.792	1.9762	2.3430
3800	12467	3798	263.465	-9.685	0.632825	0.624549	0.836756	0.683066	325.392	1.9931	2.3377
3900	12795	3898	262.816	-10.334	0.624672	0.616503	0.828016	0.675932	324.990	2.0102	2.3325
4000	13123	3997	262.166	-10.984	0.616604 ⁺²	0.608541 ⁻¹	0.819347 ⁻¹	0.668854 ⁻¹	324.589	2.0275 ⁻⁵	2.3273 ⁻²
4100	13451	4097	261.517	-11.633	0.608622	0.600663	0.810747	0.661834	324.187	2.0449	2.3220
4200	13780	4197	260.868	-12.282	0.600723	0.592868	0.802216	0.654871	323.784	2.0626	2.3168
4300	14108	4297	260.219	-12.931	0.592908	0.585155	0.793755	0.647963	323.381	2.0804	2.3115
4400	14436	4397	259.570	-13.580	0.585176	0.577524	0.785363	0.641112	322.977	2.0985	2.3063
4500	14764	4497	258.921	-14.229	0.577526 ⁺²	0.569973 ⁻¹	0.777038 ⁻¹	0.63317 ⁻¹	322.573	2.1167 ⁻⁵	2.3010 ⁻²
4600	15092	4597	258.272	-14.878	0.569957	0.562504	0.768782	0.627577	322.169	2.1352	2.2958
4700	15420	4697	257.623	-15.527	0.562469	0.555114	0.760593	0.620893	321.764	2.1538	2.2905
4800	15748	4796	256.974	-16.176	0.555061	0.547802	0.752472	0.614263	321.358	2.1727	2.2852
4900	16076	4896	256.325	-16.825	0.547732	0.540570	0.744417	0.607687	320.952	2.1917	2.2800
5000	16404	4996	255.676	-17.474	0.540483 ⁺²	0.533415 ⁻¹	0.736429 ⁻¹	0.601166 ⁻¹	320.545	2.2110 ⁻⁵	2.2747 ⁻²
5100	16732	5096	255.027	-18.123	0.533311	0.526337	0.728506	0.594699	320.138	2.2305	2.2694
5200	17060	5196	254.378	-18.772	0.526217	0.519336	0.720649	0.588285	319.731	2.2502	2.2642
5300	17388	5296	253.729	-19.421	0.519200	0.512410	0.712858	0.581925	319.323	2.2701	2.2589
5400	17717	5395	253.080	-20.070	0.512259	0.505560	0.705131	0.575617	318.914	2.2903	2.2536
5500	18045	5495	252.431	-20.719	0.505393 ⁺²	0.498784 ⁻¹	0.697469 ⁻¹	0.569362 ⁻¹	318.505	2.3107 ⁻⁵	2.2483 ⁻²
5600	18373	5595	251.782	-21.368	0.498602	0.492082	0.689871	0.563160	318.095	2.3313	2.2430
5700	18701	5695	251.133	-22.017	0.491886	0.485454	0.682336	0.557009	317.685	2.3522	2.2377
5800	19029	5795	250.484	-22.666	0.485243	0.478898	0.674865	0.550910	317.275	2.3732	2.2324
5900	19357	5895	249.836	-23.314	0.478673	0.472414	0.667457	0.544863	316.863	2.3946	2.2272
6000	19685	5994	249.187	-23.963	0.472176 ⁺²	0.466002 ⁻¹	0.660111 ⁻¹	0.538866 ⁻¹	316.452	2.4162 ⁻⁵	2.2218 ⁻²
6100	20013	6094	248.538	-24.612	0.465751	0.459660	0.652828	0.532921	316.040	2.4380	2.2165
6200	20342	6194	247.889	-25.261	0.459396	0.453389	0.645607	0.527026	315.627	2.4600	2.2112
6300	20669	6294	247.241	-25.909	0.453113	0.447187	0.638447	0.521181	315.213	2.4824	2.2059
6400	20997	6394	246.592	-26.558	0.446899	0.441055	0.631348	0.515386	314.800	2.5049	2.2006
6500	21325	6493	245.943	-27.207	0.440755 ⁺²	0.434991 ⁻¹	0.624310 ⁻¹	0.509641 ⁻¹	314.385	2.5278 ⁻⁵	2.1953 ⁻²
6600	21654	6593	245.294	-27.856	0.434679	0.428995	0.617332	0.503945	313.971	2.5509	2.1900
6700	21982	6693	244.646	-28.504	0.428672	0.423066	0.610415	0.498298	313.555	2.5743	2.1847
6800	22310	6793	243.997	-29.153	0.422732	0.417204	0.603557	0.492699	313.139	2.5979	2.1793
6900	22638	6893	243.349	-29.801	0.416859	0.411408	0.596758	0.487149	312.723	2.6218	2.1740
7000	22966	6992	242.700	-30.450	0.411053 ⁺²	0.405677 ⁻¹	0.590018 ⁻¹	0.481648 ⁻¹	312.306	2.6461 ⁻⁵	2.1687 ⁻²
7100	23294	7092									

標準大気 (高度20,000m迄) (2/2)

幾何高度 Z		ジオポテンシャル高度 H	温度 T	温度 t	気圧 P	P/P_0	密度 ρ	ρ/ρ_0	音速 a_s	動粘性係数 ν	熱伝導率 λ
m	ft	m	K	℃	mbar		kg/m ³		m/s	m ² /s	W/(m·K)
7300	23950	7292	240.754	-32.396	3.94026 ⁺²	3.88874 ⁻¹	5.70150 ⁻¹	4.65428 ⁻¹	311.051	2.7204 ⁻⁵	2.1527 ⁻²
7400	24278	7391	240.106	-33.044	3.88480	3.83400	5.63642	4.60116	310.632	2.7458	2.1473
7500	24606	7491	239.457	-33.693	3.82997 ⁺²	3.77988 ⁻¹	5.57192 ⁻¹	4.54850 ⁻¹	310.212	2.7714 ⁻⁵	2.1420 ⁻²
7600	24934	7591	238.809	-34.341	3.77577	3.72639	5.50798	4.49631	309.792	2.7974	2.1366
7700	25262	7691	238.161	-34.989	3.72219	3.67352	5.44462	4.44458	309.371	2.8237	2.1313
7800	25591	7790	237.512	-35.638	3.66924	3.62126	5.38181	4.39331	308.950	2.8503	2.1259
7900	25919	7890	236.864	-36.286	3.61690	3.56960	5.31956	4.34250	308.528	2.8772	2.1205
8000	26247	7990	236.215	-36.935	3.56516 ⁺²	3.51854 ⁻¹	5.25786 ⁻¹	4.29213 ⁻¹	308.105	2.9044 ⁻⁵	2.1152 ⁻²
8100	26575	8090	235.567	-37.583	3.51403	3.46808	5.19671	4.24222	307.682	2.9320	2.1098
8200	26903	8189	234.919	-38.231	3.46349	3.41820	5.13612	4.19275	307.258	2.9599	2.1044
8300	27231	8289	234.270	-38.880	3.41355	3.36891	5.07606	4.14372	306.824	2.9882	2.0991
8400	27559	8389	233.622	-39.528	3.36419	3.32020	5.01655	4.09514	306.409	3.0167	2.0937
8500	27887	8489	232.974	-40.176	3.31542 ⁺²	3.27206 ⁻¹	4.95757 ⁻¹	4.04700 ⁻¹	305.984	3.0457 ⁻⁵	2.0883 ⁻²
8600	28215	8588	232.326	-40.824	3.26722	3.22449	4.89913	3.99929	305.558	3.0749	2.0829
8700	28543	8688	231.677	-41.473	3.21959	3.17748	4.84122	3.95201	305.131	3.1046	2.0775
8800	28871	8788	231.029	-42.121	3.17252	3.13103	4.78383	3.90517	304.704	3.1346	2.0722
8900	29199	8888	230.381	-42.769	3.12602	3.08514	4.72697	3.85875	304.276	3.1650	2.0668
9000	29528	8987	229.733	-43.417	3.08007 ⁺²	3.03979 ⁻¹	4.67063 ⁻¹	3.81276 ⁻¹	303.848	3.1957 ⁻⁵	2.0614 ⁻²
9100	29856	9087	229.085	-44.065	3.03467	2.99498	4.61481	3.76719	303.419	3.2268	2.0560
9200	30184	9187	228.436	-44.714	2.98981	2.95072	4.55949	3.72204	302.990	3.2584	2.0506
9300	30512	9286	227.788	-45.362	2.94550	2.90698	4.50469	3.67730	302.559	3.2903	2.0452
9400	30840	9386	227.140	-46.010	2.90172	2.86377	4.45040	3.63298	302.129	3.3226	2.0398
9500	31168	9486	226.462	-46.658	2.85847 ⁺²	2.82109 ⁻¹	4.39661 ⁻¹	3.58907 ⁻¹	301.697	3.3553 ⁻⁵	2.0343 ⁻²
9600	31496	9586	225.844	-47.306	2.81574	2.77892	4.34332	3.54557	301.265	3.3884	2.0289
9700	31824	9686	225.196	-47.954	2.77353	2.73727	4.29053	3.50247	300.833	3.4219	2.0235
9800	32152	9785	224.548	-48.602	2.73184	2.69612	4.23823	3.45978	300.400	3.4559	2.0181
9900	32480	9885	223.900	-49.250	2.69066	2.65548	4.18642	3.41749	299.966	3.4903	2.0127
10000	32808	9984	223.252	-49.898	2.64999 ⁺²	2.61533 ⁻¹	4.13510 ⁻¹	3.37559 ⁻¹	299.532	3.5251 ⁻⁵	2.0072 ⁻²
10100	33136	10084	222.604	-50.546	2.60981	2.57569	4.08427	3.33410	299.097	3.5604	2.0018
10200	33465	10184	221.956	-51.194	2.57013	2.53653	4.03391	3.29299	298.661	3.5961	1.9964
10300	33793	10283	221.308	-51.842	2.53095	2.49785	3.98404	3.25227	298.225	3.6322	1.9909
10400	34121	10383	220.660	-52.490	2.49225	2.45965	3.93463	3.21195	297.788	3.6689	1.9855
10500	34449	10483	220.013	-53.137	2.45402 ⁺²	2.42193 ⁻¹	3.88570 ⁻¹	3.17200 ⁻¹	297.351	3.7060 ⁻⁵	1.9801 ⁻²
10600	34777	10582	219.365	-53.785	2.41628	2.38469	3.83724	3.13244	296.912	3.7406	1.9746
10700	35105	10682	218.717	-54.433	2.37901	2.34790	3.78924	3.09326	296.474	3.7816	1.9692
10800	35433	10782	218.069	-55.081	2.34221	2.31158	3.74171	3.05446	296.034	3.8202	1.9637
10900	35761	10881	217.421	-55.729	2.30587	2.27572	3.69463	3.01603	295.594	3.8592	1.9583
11000	36089	10981	216.774	-56.376	2.26999 ⁺²	2.24031 ⁻¹	3.64801 ⁻¹	2.97797 ⁻¹	295.154	3.8988 ⁻⁵	1.9528 ⁻²
11200	36745	11180	216.650	-56.500	2.19976	2.17099	3.53716	2.88748	295.069	4.0191	1.9518
11400	37402	11380	216.650	-56.500	2.13171	2.10383	3.42773	2.79815	295.069	4.1474	1.9518
11600	38058	11579	216.650	-56.500	2.06576	2.03875	3.32169	2.71159	295.069	4.2798	1.9518
11800	38714	11778	216.650	-56.500	2.00186	1.97568	3.21894	2.62771	295.069	4.4164	1.9518
12000	39370	11977	216.650	-56.500	1.93994 ⁺²	1.91457 ⁻¹	3.11937 ⁻¹	2.54643 ⁻¹	295.069	4.5574 ⁻⁵	1.9518 ⁻²
12200	40026	12177	216.650	-56.500	1.87994	1.85535	3.02289	2.46767	295.069	4.7028	1.9518
12400	40682	12376	216.650	-56.500	1.82180	1.79797	2.92940	2.39135	295.069	4.8529	1.9518
12600	41339	12575	216.650	-56.500	1.76546	1.74237	2.83881	2.31739	295.069	5.0078	1.9518
12800	41995	12774	216.650	-56.500	1.71086	1.68849	2.75102	2.24573	295.069	5.1676	1.9518
13000	42651	12973	216.650	-56.500	1.65796 ⁺²	1.63628 ⁻¹	2.66595 ⁻¹	2.17629 ⁻¹	295.069	5.3325 ⁻⁵	1.9518 ⁻²
13200	43307	13173	216.650	-56.500	1.60669	1.58568	2.58352	2.10900	295.069	5.5026	1.9518
13400	43963	13372	216.650	-56.500	1.55702	1.53666	2.50365	2.04379	295.069	5.6782	1.9518
13600	44619	13571	216.650	-56.500	1.50888	1.48915	2.42624	1.98061	295.069	5.8593	1.9518
13800	45276	13770	216.650	-56.500	1.46223	1.44311	2.35124	1.91938	295.069	6.0462	1.9518
14000	45932	13969	216.650	-56.500	1.41703 ⁺²	1.39850 ⁻¹	2.27855 ⁻¹	1.86004 ⁻¹	295.069	6.2391 ⁻⁵	1.9518 ⁻²
14200	46588	14168	216.650	-56.500	1.37323	1.35528	2.20812	1.80255	295.069	6.4381	1.9518
14400	47244	14367	216.650	-56.500	1.33079	1.31339	2.13987	1.74684	295.069	6.6434	1.9518
14600	47900	14567	216.650	-56.500	1.28966	1.27279	2.07374	1.69285	295.069	6.8553	1.9518
14800	48556	14766	216.650	-56.500	1.24980	1.23346	2.00965	1.64053	295.069	7.0739	1.9518
15000	49213	14965	216.650	-56.500	1.21118 ⁺²	1.19534 ⁻¹	1.94755 ⁻¹	1.58983 ⁻¹	295.069	7.2995 ⁻⁵	1.9518 ⁻²
15200	49869	15164	216.650	-56.500	1.17375	1.15840	1.88736	1.54070	295.069	7.5323	1.9518
15400	50525	15363	216.650	-56.500	1.13748	1.12261	1.82905	1.49310	295.069	7.7724	1.9518
15600	51181	15562	216.650	-56.500	1.10234	1.08792	1.77253	1.44697	295.069	8.0202	1.9518
15800	51837	15761	216.650	-56.500	1.06828	1.05431	1.71777	1.40226	295.069	8.2759	1.9518
16000	52493	15960	216.650	-56.500	1.03528 ⁺²	1.02174 ⁻¹	1.66470 ⁻¹	1.35894 ⁻¹	295.069	8.5397 ⁻⁵	1.9518 ⁻²
16200	53150	16159	216.650	-56.500	1.00330	9.90179 ⁻²	1.61328	1.31696	295.069	8.8119	1.9518
16400	53806	16358	216.650	-56.500	9.72307 ⁺¹	9.59593	1.56345	1.27628	295.069	9.0928	1.9518
16600	54462	16557	216.650	-56.500	9.42275	9.29953	1.51515	1.23686	295.069	9.3826	1.9518
16800	55118	16756	216.650	-56.500	9.13172	9.01231	1.46836	1.19866	295.069	9.6816	1.9518
17000	55774	16955	216.650	-56.500	8.84970 ⁺¹	8.73398 ⁻²	1.42301 ⁻¹	1.16164 ⁻¹	295.069	9.9902 ⁻⁵	1.9518 ⁻²
17200	56430	17154	216.650	-56.500	8.57641	8.46426	1.37907	1.12577	295.069	1.0309 ⁻⁴	1.9518
17400	57087	17353	216.650	-56.500	8.31157	8.20288	1.33648	1.09100	295.069	1.0637	1.9518
17600	57743	17551	216.650	-56.500	8.05492	7.94959	1.29521	1.05731	295.069	1.0976	1.9518
17800	58399	17750	216.650	-56.500	7.80622	7.70414	1.25522	1.02467	295.069	1.1326	1.9518
18000	59055	17949	216.650	-56.500	7.56521 ⁺¹	7.46628 ⁻²	1.21647 ⁻¹	9.93034 ⁻²	295.069	1.1686 ⁻⁴	1.9518 ⁻²
18200	59711	18148	216.650	-56.500	7.33165	7.23578	1.17891	9.62377	295.069	1.2059	1.9518
18400	60367	18347	216.650	-56.500	7.10532	7.01241	1.14252	9.32668	295.069	1.2443	1.9518
18600	61024	18546	216.650	-56.500	6.88599	6.79595	1.10725	9.03878	295.069	1.2839	1.9518
18800	61680	18745	216.650	-56.500	6.67345	6.58618	1.07307	8.75978	295.069	1.3248	1.9518
19000	62336	18943	216.650	-56.500	6.46747 ⁺¹	6.38290 ⁻²	1.03995 ⁻¹	8.48492 ⁻²	295.069	1.3670 ⁻⁴	1.9518 ⁻²
19200	62992	19142	216.650	-56.500	6.26787	6.18590	1.00786	8.22741	295.069	1.4105	1.9518
19400	63648	19341	216.650	-56.500	6.07444	5.99500	9.76754 ⁻²	7.97350	295.069	1.4554	1.9518
19600	64304	19540	216.650	-56.500	5.88699	5.81000	9.46613	7.72745	295.069	1.5018	1.9518
19800	64961	19739	216.650	-56.500	5.70533	5.63					