

PROJEKT N1
Opracowanie serii obserwacji oraz ocena niepewności wyniku pomiaru
Dane liczbowe do zagadnienia projektowego ZP-N1

Grupa P1

Dane według wariantu (Numer na liście)

n- liczba obserwacji, α – poziom istotności, p- poziom ufności

Numer	1	2	3	4	5	6	7	8	9	10	11	12
n	225	203	235	239	246	231	228	237	241	210	208	212
α	0.05	0.075	0.10	0.05	0.075	0.10	0.05	0.10	0.075	0.05	0.075	0.10
p	0.90	0.95	0.99	0.90	0.95	0.99	0.90	0.95	0.99	0.90	0.95	0.99
Numer	13	14	15									
n	193	220	214									
α	0.05	0.075	0.10									
p	0.90	0.95	0.99									

Zadania:

1. Wyznaczanie wartości średniej oraz eksperymentalnego standardowego odchylenia.
2. Budowa histogramu (z przedstawieniem wszystkich etapów i wartości).
3. Test χ^2 dla rozkładów jednostajnego i normalnego dla zadanego poziomu istotności α .
Przedstawienie teoretycznych histogramów dla rozkładów jednostajnego i normalnego.
4. Wyznaczanie standardowej oraz rozszerzonej niepewności (dla zadanego poziomu ufności) wyniku opracowania.
5. Przetworzenie wyniku pomiaru w uproszczonej formie.

Sprawozdanie z zagadnienia projektowego:

1. Strona tytułowa.
2. Dane wejściowe.
3. Wzory na obliczenie wartości średniej oraz eksperymentalnego standardowego odchylenia.
4. Histogram: liczba przedziałów, granice przedziałów, liczby wyników w każdym przedziale, częstotliwości wyników w każdym przedziale, rysunek histogramu.
5. Teoretyczne częstotliwości dla każdego przedziału przy założeniu rozkładu jednostajnego i normalnego, rysunki tych częstotliwości nałożone na częstotliwości eksperymentalne.
6. Wartości dotyczące testu χ^2 dla rozkładów jednostajnego i normalnego: wartości χ^2 wyznaczone z rozkładu oraz teoretycznych wartości, dopuszczana wartość χ^2 dla zadanego poziomu istotności, oraz wynik testów.
7. Wzory i wartości standardowej i rozszerzonej (dla zadanego poziomu ufności) niepewności wyniku.
8. Przedstawienie wyniku opracowania w uproszczonej formie.
9. Podsumowanie.

Zadanie P1, gr. P1

Wariant 1, Grupa P1, ZP-N1

1.922	2.184	2.157	2.077	1.785	2.051	2.117	2.152	2.322	1.816	2.226	1.987	2.340	2.525
	1.947	1.928	2.246	2.300	1.628	2.032	2.303	2.234	2.408	1.789	2.094	1.813	2.616
	2.134	1.999	2.175	2.148	2.193	2.153	1.800	1.997	2.369	1.994	1.814	2.111	2.109
	2.109	1.895	2.089	2.215	1.918	1.948	1.722	2.286	2.564	2.090	2.112	2.275	1.932
	2.255	2.415	2.471	2.588	2.297	2.034	2.047	2.082	1.534	2.803	1.820	2.535	2.357
	1.468	2.180	2.495	2.192	2.563	1.912	2.441	2.052	2.032	1.825	2.408	1.778	2.705
	2.436	2.109	2.024	2.243	2.207	2.261	1.864	1.732	2.391	1.907	2.367	2.121	2.408
	1.955	2.434	1.752	2.434	2.085	2.024	2.360	2.256	2.341	2.332	2.496	1.578	2.251
	2.554	1.947	2.003	1.971	2.600	2.246	2.173	2.185	1.976	1.772	2.000	2.013	1.878
	2.254	2.098	1.823	2.325	2.099	2.361	2.127	1.611	2.250	1.815	2.204	2.308	2.134
	2.215	2.010	1.722	2.525	2.248	1.787	2.150	2.083	2.038	2.083	2.457	2.015	1.952
	1.826	2.171	2.209	2.130	2.279	2.047	2.178	2.336	1.865	2.172	2.395	2.199	2.095
	2.215	1.974	2.090	2.157	2.219	1.995	2.061	2.044	1.966	1.655	2.158	2.298	2.056
	2.335	2.428	2.406	2.069	2.175	2.353	2.022	1.760	2.370	2.097	1.668	2.576	1.591
	2.057	1.950	2.231	2.306	1.829	2.396	2.155	2.277	1.798	2.333	1.777	2.467	2.106
	2.009	2.386	2.268	2.061	2.439	1.917	2.225	2.593	2.149	2.142	2.178	2.256	1.816
	1.783	2.210	2.456	2.387	2.129	2.283	2.003	2.380	1.552	2.329	2.239	2.560	1.574
	2.090	2.260	2.061	2.210	2.143	2.377	1.731	2.236	1.729	2.143	1.890	1.892	2.418
	1.924	1.190	2.304	1.593	2.370	2.264	2.090	2.133	1.742	2.003	1.916	1.744	1.813
	2.417	1.695											

Wariant 2, Grupa P1, ZP-N1

1.487	1.544	1.165	1.553	1.239	1.371	1.202	1.665	1.323	1.133	1.429	1.247	1.374	1.167
	1.138	1.527	1.534	1.479	1.228	1.583	1.666	1.392	1.642	1.511	1.483	1.227	1.385
	1.490	1.575	1.538	1.685	1.192	1.440	1.576	1.131	1.211	1.218	1.455	1.197	1.496
	1.530	1.321	1.527	1.253	1.444	1.416	1.132	1.418	1.249	1.391	1.625	1.347	1.669
	1.629	1.306	1.438	1.203	1.572	1.326	1.629	1.617	1.191	1.586	1.366	1.509	1.686
	1.456	1.594	1.393	1.508	1.399	1.518	1.304	1.667	1.596	1.286	1.555	1.339	1.476
	1.680	1.603	1.631	1.273	1.363	1.503	1.333	1.134	1.169	1.467	1.382	1.143	1.494
	1.229	1.307	1.132	1.140	1.417	1.604	1.391	1.546	1.383	1.433	1.511	1.306	1.274
	1.136	1.236	1.653	1.672	1.189	1.666	1.680	1.343	1.509	1.238	1.169	1.483	1.665
	1.527	1.534	1.370	1.435	1.134	1.531	1.632	1.164	1.631	1.136	1.164	1.340	1.582
	1.301	1.642	1.415	1.518	1.269	1.232	1.201	1.442	1.263	1.482	1.500	1.476	1.618
	1.167	1.176	1.189	1.142	1.645	1.274	1.492	1.408	1.400	1.672	1.316	1.349	1.539
	1.434	1.323	1.137	1.589	1.183	1.281	1.376	1.228	1.359	1.683	1.540	1.248	1.384
	1.256	1.540	1.510	1.409	1.518	1.418	1.495	1.617	1.634	1.379	1.189	1.321	1.433
	1.620	1.211	1.194	1.429	1.394	1.611	1.395	1.519	1.204	1.576	1.144	1.134	1.449
	1.156	1.450	1.430	1.413	1.673	1.487	1.673	1.395	1.444	1.450	1.566	1.280	1.351
	1.308	1.684	1.138	1.266	1.571	1.471	1.606	1.291	1.617	1.492	1.275	1.676	1.161
	1.572	1.680	1.405	1.510	1.508	1.478	1.600	1.593	1.580	1.579	1.461	1.587	1.177
	1.133	1.249	1.318	1.673	1.686	1.154	1.236	1.288	1.635	1.633	1.512	1.451	1.637
	1.293	1.485											

Wariant 3, Grupa P1, ZP-N1

1.084	1.431	1.841	2.169	1.691	1.811	2.641	1.742	2.471	2.906	2.525	1.401	1.918	2.135
	2.240	1.033	2.198	2.168	1.481	1.360	0.846	1.999	2.785	1.857	1.799	2.054	1.242
	2.051	2.165	2.233	2.193	2.121	1.247	2.518	2.126	1.320	2.307	1.121	1.859	2.612
	1.585	2.393	2.289	1.410	1.597	1.655	1.828	2.525	1.546	1.515	2.034	1.377	1.521
	1.064	1.501	1.244	2.439	0.778	1.534	1.222	1.364	2.770	1.857	1.891	1.056	2.297
	1.776	2.202	2.288	1.964	1.991	1.705	1.641	1.158	1.415	1.269	2.123	1.271	1.708
	1.985	1.940	2.058	1.741	2.234	2.275	1.778	1.529	1.835	2.307	2.137	1.764	1.009
	2.527	2.019	1.836	1.753	1.820	1.579	2.279	1.273	2.125	2.281	1.714	1.537	1.590
	1.789	2.149	2.283	2.677	1.646	1.452	1.616	2.029	2.180	2.439	2.039	1.838	2.193
	1.681	1.929	2.151	1.428	2.177	2.043	1.814	1.729	2.033	2.233	1.866	1.180	2.071
	2.162	1.789	2.440	1.650	1.987	2.342	1.921	0.967	2.225	1.847	2.263	1.265	2.022
	2.248	1.962	1.462	2.117	1.687	1.844	1.722	2.034	1.950	2.941	2.446	2.044	1.862
	1.547	1.820	2.057	2.144	1.929	1.576	1.277	1.713	1.840	1.879	1.356	1.642	1.737
	2.233	2.360	1.709	2.436	2.190	2.438	2.423	2.185	2.119	1.860	1.258	1.844	2.018
	1.948	2.272	1.792	2.657	1.430	1.683	2.144	2.323	1.838	1.584	2.057	1.614	2.265
	1.781	2.163	1.912	2.233	1.670	1.770	1.871	1.789	1.351	1.690	1.807	2.154	1.567
	1.754	1.909	1.066	2.267	1.498	2.663	2.053	1.789	1.609	1.905	2.196	2.167	2.707
	1.567	1.465	2.041	2.139	1.104	1.561	1.116	1.734	1.824	1.574	1.424	2.005	1.045
	1.745	2.180	1.824	2.239	1.750	2.114	1.347	1.415	2.217	1.568	1.907	1.994	2.166
	2.426	2.137											

Wariant 4, Grupa P1, ZP-N1

0.978	1.160	1.013	1.395	1.389	1.229	1.350	0.912	1.102	0.879	1.069	1.138	1.278	1.061
	1.240	1.208	1.051	1.070	0.907	1.265	1.330	0.900	1.320	1.267	0.965	1.287	0.944
	1.189	1.217	0.884	0.886	1.027	0.995	1.209	1.098	1.127	0.924	1.307	1.157	1.264
	1.374	1.232	1.382	1.101	1.346	1.091	1.091	0.997	0.886	0.943	0.911	1.005	1.166
	1.038	1.170	1.277	1.185	1.314	1.152	1.202	1.173	1.242	1.340	1.002	1.017	1.047
	1.212	1.001	1.141	1.154	1.083	1.233	1.066	0.890	1.095	1.374	0.955	1.244	1.070
	1.011	1.366	1.050	1.227	1.305	1.212	0.941	1.105	1.142	1.366	1.257	0.941	1.048
	1.161	1.354	1.258	1.075	1.062	1.363	1.191	1.125	0.895	1.094	1.394	1.095	1.059

	0.875	0.904	1.334	0.886	1.115	1.243	1.327	1.047	1.150	1.292	1.346	0.986	1.066
	0.996	1.268	0.928	1.208	1.144	1.300	1.031	0.950	1.372	0.922	0.882	0.988	1.136
	1.343	0.902	1.188	1.030	1.389	0.907	0.882	1.243	1.159	1.123	1.096	0.882	1.223
	0.877	1.269	1.340	1.104	1.337	1.076	0.974	1.268	1.148	0.994	1.263	1.205	0.901
	1.082	1.084	1.018	1.026	1.143	0.880	1.231	1.078	1.227	1.318	1.330	0.957	1.399
	1.217	1.287	1.385	1.312	1.116	1.306	1.006	1.168	1.337	1.350	1.252	0.895	0.909
	1.018	0.917	1.238	1.067	1.336	1.153	0.948	1.126	1.041	1.244	1.190	1.056	1.166
	1.077	1.272	1.199	0.925	1.295	1.061	1.257	1.364	1.126	1.092	1.216	1.386	1.319
	0.873	0.988	1.000	1.049	1.246	0.934	1.191	0.982	1.236	1.121	0.939	1.374	1.071
	0.903	0.933	1.026	1.289	0.969	1.255	1.348	1.116	0.938	0.980	1.208	0.888	1.001
	1.300	1.126	1.091	1.249	1.009	0.905	1.205	1.320	1.356	1.309	0.995	0.918	1.132
	1.295	1.080											
Wariant 5, Grupa P1, ZP-N1													
1.968	1.807	0.982	1.565	1.728	1.331	1.010	1.744	1.355	1.186	1.104	1.683	2.031	1.683
	1.620	1.644	1.822	1.225	2.063	1.062	0.905	1.692	1.786	0.786	1.655	2.018	1.645
	2.339	1.596	1.267	1.266	1.672	1.489	1.618	2.343	1.328	1.475	1.680	0.737	1.798
	1.254	1.847	2.631	2.243	1.875	1.409	1.693	1.045	1.537	1.688	1.557	1.549	1.931
	1.570	2.147	1.812	1.290	1.799	1.406	1.472	1.957	1.875	1.866	2.262	1.463	1.492
	1.961	2.041	1.550	1.770	1.744	1.901	1.682	1.946	1.772	1.823	1.843	1.646	1.151
	1.876	1.674	1.027	0.765	1.473	1.403	1.872	1.958	1.390	1.200	1.437	1.832	1.219
	1.559	1.940	1.669	1.782	1.488	2.262	1.485	1.518	1.390	1.569	1.631	1.361	1.799
	1.748	1.608	1.633	2.004	2.027	1.442	1.673	0.499	1.626	1.735	1.208	1.318	1.777
	1.303	1.499	2.046	1.399	1.559	1.388	1.809	1.239	1.116	2.229	1.684	1.487	2.153
	1.508	1.999	1.531	1.892	0.551	1.378	2.508	1.524	1.676	1.789	1.462	2.223	2.471
	1.153	1.426	1.947	1.712	1.898	2.128	1.569	1.144	1.495	1.708	1.757	1.230	1.489
	1.255	1.452	1.627	1.685	1.387	1.343	2.078	1.660	1.608	2.326	1.482	1.695	1.178
	1.956	1.626	1.390	1.697	1.253	0.750	1.920	1.477	1.704	0.797	1.735	1.800	1.505
	1.070	1.259	1.891	2.379	1.839	1.938	1.776	1.870	1.729	1.618	1.962	1.737	1.541
	1.460	1.208	1.316	1.308	1.487	1.978	1.721	1.651	1.327	1.765	1.875	1.171	1.501
	0.975	1.631	1.281	2.370	1.818	1.477	1.512	1.376	1.950	1.705	1.497	1.918	2.269
	1.403	2.510	2.556	1.737	2.018	1.030	1.786	1.441	1.164	2.122	2.087	1.462	1.304
	1.429	1.693	1.171	2.084	1.426	1.929	1.372	1.727	1.549	1.625	1.231	1.311	1.789
	1.216	1.348											
Wariant 6, Grupa P1, ZP-N1													
0.964	0.894	0.679	0.950	0.918	0.695	0.954	1.091	1.015	1.102	0.797	1.107	0.847	0.762
	1.073	0.882	0.675	1.034	1.128	0.944	0.802	0.828	1.008	0.905	0.762	1.094	1.050
	1.150	0.780	0.770	0.794	0.904	1.081	0.895	1.150	1.028	1.020	0.686	0.973	0.734
	0.971	0.790	0.831	1.001	1.083	0.955	0.685	0.915	0.843	0.952	0.828	0.717	0.897
	0.824	0.678	0.727	0.770	0.947	0.814	1.072	0.814	0.927	0.915	0.732	1.033	0.772
	0.936	0.832	0.694	0.889	1.128	0.865	0.715	0.924	0.890	1.118	0.946	0.863	0.873
	0.989	0.709	0.981	0.971	1.042	1.117	1.098	1.074	0.957	0.828	1.141	1.148	0.723
	0.936	1.019	1.130	0.674	0.851	0.809	1.126	0.848	0.863	0.761	0.942	1.138	1.079
	1.112	0.897	0.776	0.682	0.741	0.980	1.065	0.918	1.036	0.806	1.053	1.035	0.738
	0.863	0.881	0.907	0.919	1.116	1.017	1.023	0.931	0.901	0.815	0.814	1.045	1.092
	0.822	0.728	0.984	0.679	0.964	0.682	0.720	1.022	1.013	0.783	1.089	1.081	0.862
	0.888	0.788	0.808	1.112	0.956	1.040	0.920	1.015	0.732	0.749	1.011	1.149	0.708
	0.794	0.922	0.995	0.952	0.783	0.943	0.748	0.722	1.015	0.845	0.982	0.844	0.829
	0.698	1.147	1.004	0.686	1.010	0.833	0.773	1.136	0.719	0.843	0.945	1.094	0.893
	1.137	0.764	0.855	0.879	1.052	0.852	0.987	1.147	0.809	1.053	1.045	1.033	0.865
	1.028	1.048	0.721	1.091	0.677	0.803	1.077	0.741	0.856	1.015	0.844	0.695	0.974
	0.769	1.015	1.099	0.818	0.724	0.675	0.779	0.727	0.724	1.014	0.903	1.087	1.148
	0.794	1.078	1.146	1.133	0.978	0.675	1.096	1.028	0.813	0.948	1.010	0.745	1.102
	1.077	1.076	0.858	0.907	0.902	1.153	1.076	0.944	1.013	1.128	0.981	0.897	0.703
	1.085	1.070											
Wariant 7, Grupa P1, ZP-N1													
1.169	1.042	1.537	1.754	1.405	1.734	1.175	1.715	1.217	1.337	1.417	1.433	1.633	1.298
	1.762	1.411	1.456	0.891	1.786	1.078	1.304	1.029	1.359	1.376	1.383	1.460	1.388
	1.636	1.298	0.924	1.692	1.094	1.687	1.219	1.207	1.639	1.202	2.006	1.536	1.139
	1.414	1.325	1.185	1.503	1.619	1.627	1.518	1.391	1.910	1.314	1.264	1.123	1.241
	1.341	0.957	1.347	1.902	1.653	1.373	1.604	1.410	1.028	1.664	1.753	1.260	1.592
	1.615	1.412	1.978	1.490	1.479	1.515	1.811	1.482	1.597	1.086	1.183	1.159	1.696
	0.930	1.387	1.368	1.223	1.296	1.355	1.567	1.132	1.460	1.635	0.704	1.532	1.621
	0.960	1.770	1.047	1.513	1.508	0.918	1.118	1.279	1.653	1.360	1.467	1.852	1.332
	1.078	1.479	1.853	1.518	1.687	1.648	1.451	1.316	1.813	1.689	1.217	1.946	0.950
	1.459	1.665	1.761	1.419	1.679	0.964	1.752	1.136	1.152	1.668	1.458	1.011	1.518
	0.986	1.084	1.537	1.591	1.257	0.949	1.408	1.524	1.498	1.206	1.541	1.235	1.558
	1.485	1.029	1.555	1.812	1.601	1.762	1.526	1.481	1.704	2.177	1.134	1.291	1.324
	1.758	0.857	1.427	1.208	1.240	1.037	1.097	1.727	1.078	1.584	1.201	1.629	1.588
	1.340	2.258	1.431	2.038	1.373	1.623	1.484	1.438	1.666	0.903	1.743	1.242	1.294
	1.589	1.551	1.745	1.268	1.593	1.255	1.634	1.204	1.174	1.261	1.420	1.641	1.276
	1.479	1.896	1.536	1.775	1.679	1.378	1.573	1.521	1.508	1.575	1.057	1.461	1.238
	1.374	1.656	1.502	1.129	1.476	1.794	1.535	1.771	1.789	1.377	0.922	1.912	1.771
	1.558	1.725	1.735	1.222	1.480	1.765	1.180	2.007	1.163	0.876	1.979	1.504	1.053

	1.380	1.137	1.149	1.434	1.280	1.898	1.407	1.580	1.227	1.580	1.709	1.330	1.251
	1.478	1.361											
Wariant 8, Grupa P1, ZP-N1													
0.541	0.750	0.551	0.563	0.528	0.476	0.567	0.487	0.639	0.689	0.674	0.514	0.530	0.719
	0.565	0.656	0.600	0.583	0.709	0.658	0.731	0.567	0.719	0.585	0.731	0.694	0.663
	0.695	0.671	0.687	0.730	0.577	0.497	0.734	0.476	0.625	0.744	0.607	0.706	0.642
	0.698	0.511	0.664	0.478	0.713	0.581	0.594	0.537	0.757	0.583	0.534	0.660	0.665
	0.713	0.517	0.716	0.593	0.459	0.657	0.466	0.740	0.693	0.513	0.540	0.655	0.474
	0.470	0.553	0.562	0.745	0.570	0.757	0.744	0.601	0.750	0.546	0.500	0.755	0.663
	0.487	0.658	0.494	0.605	0.594	0.478	0.611	0.492	0.614	0.537	0.743	0.561	0.500
	0.630	0.548	0.733	0.475	0.595	0.473	0.468	0.667	0.727	0.572	0.644	0.637	0.548
	0.737	0.751	0.617	0.518	0.506	0.536	0.500	0.570	0.590	0.627	0.550	0.684	0.629
	0.596	0.466	0.717	0.484	0.576	0.470	0.742	0.504	0.619	0.757	0.661	0.468	0.555
	0.525	0.609	0.530	0.653	0.545	0.646	0.541	0.639	0.746	0.635	0.465	0.737	0.726
	0.609	0.686	0.458	0.467	0.732	0.677	0.631	0.610	0.523	0.601	0.750	0.504	0.716
	0.663	0.466	0.698	0.739	0.656	0.665	0.752	0.647	0.607	0.473	0.591	0.504	0.707
	0.539	0.527	0.565	0.506	0.723	0.551	0.737	0.748	0.717	0.740	0.528	0.513	0.549
	0.623	0.718	0.644	0.674	0.579	0.647	0.668	0.722	0.673	0.564	0.470	0.581	0.599
	0.519	0.636	0.744	0.733	0.656	0.552	0.728	0.624	0.482	0.653	0.715	0.733	0.459
	0.592	0.653	0.699	0.738	0.655	0.761	0.539	0.694	0.617	0.701	0.520	0.478	0.620
	0.466	0.602	0.631	0.716	0.540	0.692	0.663	0.603	0.733	0.470	0.569	0.464	0.720
	0.632	0.709	0.473	0.474	0.657	0.652	0.489	0.581	0.739	0.658	0.558	0.610	0.545
	0.602	0.679											
Wariant 9, Grupa P1, ZP-N1													
1.311	1.058	1.361	1.134	1.312	1.137	0.848	1.012	0.841	1.380	1.300	1.132	1.521	1.202
	1.595	1.225	0.593	1.155	1.179	1.046	0.770	1.518	1.257	1.061	1.069	1.077	1.464
	0.667	1.243	1.703	1.201	1.020	1.285	0.905	1.232	1.339	1.032	1.488	1.415	0.853
	1.467	1.150	1.061	1.007	1.379	1.185	1.070	1.380	0.815	1.230	0.937	1.471	1.142
	1.323	1.257	1.071	1.354	1.593	1.257	0.933	1.163	1.235	0.912	1.030	1.281	1.089
	1.165	0.854	0.872	1.079	1.268	1.288	1.002	1.227	1.040	1.055	1.499	1.269	1.320
	0.719	1.353	1.514	1.102	1.558	1.171	1.189	1.178	1.646	0.851	1.089	1.421	0.947
	1.472	1.290	1.165	1.334	1.116	1.087	1.413	1.706	1.404	1.196	1.317	1.193	1.231
	1.004	1.253	1.251	1.196	1.071	1.499	1.399	1.505	1.049	1.283	0.903	1.650	1.098
	1.305	1.076	0.676	1.380	1.421	1.114	1.046	1.556	1.153	0.906	0.800	0.872	1.216
	1.066	1.063	1.330	1.353	1.480	1.302	0.847	1.342	1.271	0.955	1.217	1.050	1.364
	0.832	1.480	0.855	1.277	1.094	1.439	0.839	1.348	1.316	0.869	1.093	1.201	1.242
	1.308	1.308	1.326	1.216	0.985	1.568	1.111	0.937	1.359	1.551	1.223	1.504	1.062
	1.321	1.137	0.910	1.305	1.297	1.031	1.068	1.171	1.181	1.626	1.023	1.658	1.032
	0.926	1.225	1.393	1.287	1.436	0.866	1.173	0.996	1.495	1.457	1.250	1.632	0.781
	1.169	1.512	1.689	1.289	0.900	1.131	1.617	1.188	1.846	1.297	1.063	0.946	1.589
	0.993	1.397	1.148	1.714	1.131	1.971	0.818	1.362	1.262	1.168	0.911	1.481	1.199
	1.316	1.454	1.438	1.328	1.663	1.475	1.304	1.716	0.873	1.495	1.348	1.207	1.284
	1.451	1.708	1.506	0.613	1.427	0.685	1.537	1.341	1.228	1.158	1.906	1.515	1.199
	1.492	1.515											
Wariant 10, Grupa P1, ZP-N1													
0.587	0.534	0.535	0.470	0.599	0.511	0.563	0.496	0.543	0.525	0.600	0.551	0.471	0.564
	0.473	0.565	0.479	0.532	0.487	0.530	0.497	0.473	0.493	0.512	0.558	0.483	0.553
	0.593	0.488	0.563	0.597	0.498	0.483	0.561	0.567	0.536	0.558	0.467	0.521	0.573
	0.475	0.534	0.542	0.600	0.593	0.506	0.597	0.558	0.467	0.595	0.483	0.531	0.544
	0.476	0.541	0.470	0.532	0.560	0.541	0.555	0.578	0.487	0.565	0.544	0.490	0.564
	0.478	0.577	0.548	0.568	0.571	0.562	0.474	0.536	0.513	0.602	0.560	0.552	0.580
	0.554	0.533	0.485	0.509	0.486	0.578	0.495	0.477	0.545	0.515	0.523	0.544	0.494
	0.578	0.564	0.572	0.568	0.494	0.466	0.517	0.501	0.565	0.505	0.525	0.548	0.512
	0.538	0.572	0.552	0.589	0.477	0.594	0.590	0.598	0.567	0.572	0.475	0.492	0.527
	0.557	0.585	0.513	0.549	0.521	0.574	0.468	0.469	0.551	0.505	0.583	0.529	0.590
	0.558	0.536	0.582	0.539	0.552	0.488	0.479	0.576	0.513	0.557	0.536	0.469	0.496
	0.512	0.591	0.476	0.509	0.520	0.504	0.559	0.507	0.598	0.475	0.498	0.481	0.568
	0.490	0.500	0.493	0.506	0.537	0.533	0.520	0.595	0.491	0.560	0.526	0.512	0.501
	0.584	0.477	0.545	0.506	0.511	0.584	0.468	0.513	0.504	0.530	0.558	0.559	0.467
	0.570	0.502	0.477	0.569	0.518	0.584	0.575	0.490	0.467	0.491	0.481	0.528	0.500
	0.533	0.537	0.469	0.487	0.485	0.544	0.587	0.507	0.566	0.504	0.550	0.547	0.589
	0.493	0.596	0.550	0.565	0.485	0.468	0.554	0.570	0.528	0.485	0.506	0.562	0.601
	0.519	0.565	0.558	0.554	0.549	0.545	0.481	0.548	0.489	0.525	0.513	0.477	0.509
	0.597	0.565	0.579	0.485	0.559	0.522	0.487	0.488	0.510	0.573	0.554	0.545	0.582
	0.534	0.532											
Wariant 11, Grupa P1, ZP-N1													
1.543	1.277	1.078	1.175	0.905	1.008	1.260	1.213	1.352	1.237	1.331	1.138	1.432	1.202
	1.182	1.084	0.965	1.578	1.287	1.138	1.078	1.506	0.901	1.325	1.138	1.190	1.297
	1.202	1.311	1.308	0.932	1.236	1.020	1.104	0.971	1.199	1.449	1.335	0.942	1.251
	1.426	1.272	1.198	1.287	1.291	1.068	1.293	1.289	1.163	0.894	1.135	1.171	1.254
	0.977	1.412	1.239	1.143	1.392	1.314	1.351	0.994	1.400	1.379	1.676	0.773	1.014
	1.366	1.131	1.188	1.203	1.112	1.421	1.037	1.514	1.283	1.170	0.996	1.053	1.155
	1.228	0.940	1.173	1.206	0.900	1.241	1.383	1.044	1.220	1.353	1.450	1.327	1.244

1.344	1.158	1.182	0.936	1.186	0.777	1.194	0.990	0.996	1.102	1.592	1.443	1.351
1.439	1.480	1.097	1.116	1.020	1.302	1.375	0.955	1.052	1.165	1.258	1.415	1.303
1.286	1.156	1.185	1.116	1.240	1.346	1.161	1.019	1.136	0.930	1.269	1.096	1.131
1.200	1.438	1.268	1.202	1.269	1.386	1.178	1.151	1.207	1.449	1.107	1.272	1.109
1.409	1.332	1.271	1.021	1.427	1.195	0.914	1.139	1.120	1.616	1.184	0.966	1.294
1.240	1.259	1.371	1.171	1.223	1.125	1.274	1.234	1.331	1.180	1.226	1.277	1.344
1.159	1.507	1.130	1.122	1.208	1.360	1.253	1.142	1.195	1.418	1.184	1.171	1.037
1.041	1.535	1.329	1.031	1.158	1.111	1.301	1.460	1.372	1.437	1.075	1.352	1.137
0.898	1.099	0.947	1.246	0.990	0.847	0.962	1.549	0.905	1.176	1.000	1.093	1.276
1.126	1.193	1.476	1.310	1.162	1.196	0.948	1.286	1.316	1.440	1.123	1.471	0.808
1.170	1.406	0.808	1.478	1.349	1.254	1.397	0.984	0.988	1.128	1.203	1.179	1.448
1.143	1.136	1.148	1.327	1.218	0.985	1.288	1.338	1.279	1.282	1.300	1.564	1.332
0.818	1.235											

Wariant 12, Grupa P1, ZP-N1

2.583	2.438	2.958	2.766	2.273	2.530	2.334	2.263	2.243	2.635	2.543	2.940	2.802	2.528
	2.391	2.429	2.254	1.985	2.352	2.600	2.587	2.406	2.876	2.135	1.996	2.582	2.816
	2.640	2.616	2.852	2.742	2.399	1.963	2.862	2.711	2.183	2.479	3.108	2.752	1.823
	2.686	2.443	1.899	2.827	2.430	2.109	2.306	2.258	1.927	2.583	2.694	2.281	2.569
	2.357	2.514	2.390	2.029	2.206	2.575	2.833	2.118	2.352	2.794	2.560	2.574	2.617
	2.773	1.967	2.122	2.504	2.471	2.105	2.116	2.450	2.187	2.357	1.961	2.305	2.211
	2.325	2.640	1.698	2.368	2.615	2.525	1.957	2.952	1.888	2.429	2.580	1.921	2.188
	3.103	2.306	2.123	2.347	2.444	2.184	2.688	2.541	3.039	1.834	3.109	2.137	1.893
	2.588	2.400	2.274	1.975	2.368	2.238	2.779	2.534	2.536	2.170	2.320	2.534	2.287
	2.628	2.643	2.127	2.139	2.518	2.685	2.864	2.202	1.995	1.938	2.072	2.173	2.690
	2.512	2.299	2.380	2.126	2.058	2.522	2.383	2.499	2.904	2.420	2.053	1.909	2.376
	2.422	2.489	2.509	2.165	2.262	2.452	2.151	2.715	2.459	2.360	2.338	2.142	2.126
	1.908	2.444	2.478	2.477	3.108	2.477	2.135	2.003	2.354	2.505	2.436	2.436	2.593
	2.842	2.048	2.658	2.579	2.616	2.165	2.520	2.345	2.455	2.591	2.617	2.460	1.968
	1.711	2.430	2.470	2.951	2.418	2.405	2.255	2.726	2.235	2.286	2.319	2.236	1.955
	2.502	1.885	2.222	2.303	2.815	2.801	2.208	2.139	2.806	2.738	2.823	2.724	2.673
	2.083	2.387	2.686	2.430	2.614	2.549	2.530	2.406	2.231	2.337	2.234	1.797	2.880
	2.825	1.996	2.404	2.529	2.530	2.421	2.569	3.058	2.566	2.104	2.371	2.872	2.838
	2.959	2.281	2.724	2.603	2.384	2.242	2.319	2.246	2.937	2.615	2.894	2.550	2.347
	2.313	2.629											

Wariant 13, Grupa P1, ZP-N1

1.449	1.650	1.568	1.693	1.601	2.022	1.614	1.937	1.571	2.002	1.947	1.938	1.586	1.770
	1.618	1.475	1.898	1.854	1.748	1.837	1.607	1.529	1.864	2.026	1.444	1.760	1.967
	1.888	1.552	1.968	1.994	1.450	1.437	1.926	1.656	1.811	1.474	1.656	1.833	1.642
	1.816	1.687	1.581	1.815	1.663	1.906	1.465	1.446	1.900	1.968	1.907	1.483	1.531
	1.485	1.900	1.500	1.659	1.781	1.677	1.635	1.474	1.457	1.574	1.926	1.785	1.876
	1.868	2.013	1.754	1.682	1.789	1.810	1.978	1.836	1.890	1.957	1.976	1.482	2.017
	1.658	1.620	1.938	1.445	1.668	1.761	1.513	1.765	1.684	1.634	1.440	1.801	1.690
	2.014	1.444	1.840	1.885	1.581	1.640	1.683	1.790	2.013	1.830	1.443	1.518	1.519
	1.769	1.532	1.629	1.872	1.794	1.822	1.561	1.488	1.457	1.781	2.028	2.017	1.491
	1.573	1.805	1.576	1.999	1.744	1.466	1.476	1.585	1.490	1.522	2.001	1.657	1.477
	1.524	1.526	1.535	1.656	1.933	1.988	1.701	1.851	1.587	1.595	1.455	1.513	1.503
	1.635	1.709	1.647	1.903	1.724	1.600	1.734	1.985	1.988	2.030	1.805	1.870	1.446
	1.835	1.904	1.930	1.535	1.472	1.920	1.898	1.654	1.718	1.794	1.537	1.650	1.550
	1.506	1.693	1.687	1.761	2.025	1.532	1.895	1.793	1.866	1.528	1.795	1.717	1.765
	1.453	1.884	1.602	1.987	1.718	2.019	1.850	1.779	1.516	1.957	1.524	1.597	1.504
	1.672	1.814	1.523	1.496	1.458	1.532	1.840	1.510	1.795	1.921	1.607	1.992	1.802
	1.699	1.767	2.031	1.653	2.022	1.481	1.523	1.769	1.675	1.990	1.916	1.798	1.585
	1.897	1.968	1.756	1.954	1.778	1.621	1.749	1.553	2.000	1.484	1.470	1.564	1.513
	1.495	1.864	1.442	1.787	1.739	1.788	1.719	1.575	1.858	1.618	1.799	1.591	2.020
	1.848	1.719											

Wariant 14, Grupa P1, ZP-N1

0.762	0.831	0.685	0.629	0.686	0.733	0.784	0.814	0.835	0.734	0.825	0.842	0.727	0.751
	0.755	0.775	0.748	0.657	0.632	0.646	0.678	0.631	0.653	0.662	0.768	0.752	0.645
	0.644	0.758	0.745	0.806	0.725	0.794	0.736	0.819	0.630	0.719	0.826	0.642	0.640
	0.827	0.805	0.780	0.716	0.764	0.658	0.707	0.633	0.780	0.777	0.732	0.701	0.686
	0.762	0.702	0.632	0.719	0.784	0.819	0.756	0.778	0.666	0.838	0.728	0.678	0.636
	0.719	0.794	0.764	0.688	0.761	0.772	0.680	0.729	0.768	0.716	0.700	0.649	0.678
	0.833	0.770	0.753	0.667	0.659	0.790	0.777	0.728	0.792	0.817	0.820	0.833	0.803
	0.742	0.634	0.787	0.806	0.766	0.831	0.662	0.740	0.688	0.687	0.713	0.676	0.663
	0.723	0.760	0.818	0.763	0.791	0.821	0.758	0.685	0.719	0.769	0.634	0.695	0.660
	0.802	0.665	0.725	0.690	0.715	0.817	0.713	0.773	0.638	0.837	0.638	0.630	0.813
	0.636	0.693	0.641	0.843	0.811	0.714	0.675	0.841	0.669	0.629	0.818	0.735	0.784
	0.822	0.700	0.818	0.631	0.657	0.723	0.662	0.763	0.656	0.778	0.822	0.719	0.641
	0.650	0.709	0.813	0.646	0.772	0.788	0.761	0.648	0.699	0.725	0.643	0.662	0.802
	0.761	0.685	0.746	0.797	0.794	0.735	0.706	0.831	0.704	0.762	0.820	0.730	0.818
	0.829	0.715	0.695	0.742	0.760	0.811	0.829	0.766	0.833	0.811	0.788	0.751	0.625
	0.753	0.678	0.704	0.631	0.666	0.770	0.826	0.732	0.792	0.683	0.819	0.767	0.634
	0.696	0.648	0.813	0.779	0.774	0.788	0.715	0.675	0.823	0.834	0.642	0.734	0.659

[illegible]

PROJEKT N1
Opracowanie serii obserwacji oraz ocena niepewności wyniku pomiaru
Dane liczbowe do zagadnienia projektowego ZP-N1

Grupa P2

Dane według wariantu (Numer na liście)

n- liczba obserwacji, α – poziom istotności, p- poziom ufności

Numer	1	2	3	4	5	6	7	8	9	10	11	12
n	195	214	205	236	211	229	235	240	204	231	224	213
α	0.10	0.05	0.075	0.10	0.05	0.075	0.10	0.05	0.075	0.10	0.05	0.075
p	0.95	0.99	0.90	0.95	0.99	0.90	0.95	0.99	0.90	0.95	0.99	0.90
Numer	13	14	15									
n	229	216	208									
α	0.10	0.05	0.075									
p	0.95	0.99	0.90									

ZP-N1

Zadania:

6. Wyznaczanie wartości średniej oraz eksperymentalnego standardowego odchylenia.
7. Budowa histogramu (z przedstawieniem wszystkich etapów i wartości).
8. Test χ^2 dla rozkładów jednostajnego i normalnego dla zadanego poziomu istotności α .
Przedstawienie teoretycznych histogramów dla rozkładów jednostajnego i normalnego.
9. Wyznaczanie standardowej oraz rozszerzonej niepewności (dla zadanego poziomu ufności) wyniku opracowania.
10. Przetworzenie wyniku pomiaru w uproszczonej formie.

Sprawozdanie z zagadnienia projektowego:

10. Strona tytułowa.
11. Dane wejściowe.
12. Wzory na obliczenie wartości średniej oraz eksperymentalnego standardowego odchylenia.
13. Histogram: liczba przedziałów, granice przedziałów, liczby wyników w każdym przedziale, częstotliwości wyników w każdym przedziale, rysunek histogramu.
14. Teoretyczne częstotliwości dla każdego przedziału przy założeniu rozkładu jednostajnego i normalnego, rysunki tych częstotliwości nałożone na częstotliwości eksperymentalne.
15. Wartości dotyczące testu χ^2 dla rozkładów jednostajnego i normalnego: wartości χ^2 wyznaczone z rozkładu oraz teoretycznych wartości, dopuszczana wartość χ^2 dla zadanego poziomu istotności, oraz wynik testów.
16. Wzory i wartości standardowej i rozszerzonej (dla zadanego poziomu ufności) niepewności wyniku.
17. Przedstawienie wyniku opracowania w uproszczonej formie.
18. Podsumowanie.

Zadanie P1, gr. P2

Wariant 1, Grupa P2, ZP-N1

1.238	1.249	1.721	1.654	1.106	1.186	1.600	1.171	1.360	1.223	1.442	1.520	1.318	1.282
	1.408	1.215	1.292	1.498	1.523	1.358	1.299	1.268	1.294	1.219	1.446	1.344	1.033
	1.138	1.287	1.317	1.215	1.280	1.680	1.253	1.322	1.462	1.383	1.534	1.344	1.274
	1.320	1.547	1.373	1.427	1.252	1.348	1.223	1.316	1.269	1.061	1.361	1.341	1.322
	1.271	1.379	1.426	1.139	1.237	1.403	1.374	1.303	1.227	1.436	1.107	1.553	1.321
	1.300	1.273	1.379	1.288	1.287	1.225	1.502	1.417	1.380	1.168	1.603	1.250	1.213
	1.244	1.534	1.298	1.377	1.323	1.401	1.515	1.578	1.278	1.088	1.342	1.250	1.254
	1.494	1.382	1.289	1.103	1.307	1.389	1.228	1.480	1.178	1.457	1.435	1.257	1.393
	1.174	1.562	1.523	1.174	1.277	1.343	1.469	1.374	1.204	1.416	1.587	1.292	1.258
	1.467	1.547	1.459	1.137	1.183	1.224	1.383	1.405	1.244	1.449	1.283	1.192	1.556
	1.009	1.452	1.429	1.300	1.380	1.267	1.152	1.118	1.285	1.181	1.096	1.382	1.433
	1.361	1.531	1.141	1.486	1.333	1.350	1.266	1.386	1.154	1.140	1.150	1.089	1.258
	1.565	1.133	1.210	1.087	1.479	1.541	1.094	1.410	1.284	1.400	1.434	1.467	1.131
	1.181	1.324	1.419	1.125	1.295	1.237	1.276	1.367	1.305	1.413	1.289	1.057	1.088
	1.293	1.161	1.234	1.320	1.450	1.505	1.262	1.581	1.417	1.204	1.024	1.199	1.415
	1.335	1.272	1.256	1.417	1.340	1.058	1.451	1.350	1.168	1.419	1.238	1.085	1.061
	1.550	1.072	1.338	1.578	1.339	1.554	1.316	1.336	1.466	1.185	1.171	1.457	1.304
	1.329	1.236	1.208	1.312	1.219	1.245	1.274	1.455	1.362	1.139	1.304	1.272	1.135
	1.311	1.148	1.452	1.160	1.209	1.140	1.521	1.334	1.445	1.319	1.344	1.338	1.380
	1.337	1.308											

Wariant 2, Grupa P2, ZP-N1

0.641	0.574	0.685	0.645	0.634	0.581	0.574	0.683	0.623	0.602	0.652	0.589	0.671	0.658
	0.687	0.560	0.606	0.553	0.558	0.577	0.656	0.634	0.553	0.586	0.632	0.624	0.669
	0.625	0.599	0.574	0.641	0.584	0.567	0.672	0.686	0.682	0.578	0.678	0.634	0.638
	0.589	0.547	0.553	0.658	0.602	0.683	0.542	0.643	0.582	0.577	0.622	0.594	0.629
	0.657	0.563	0.638	0.622	0.654	0.590	0.686	0.588	0.554	0.634	0.665	0.535	0.564
	0.605	0.676	0.553	0.542	0.613	0.640	0.687	0.629	0.662	0.655	0.607	0.559	0.600
	0.678	0.609	0.639	0.625	0.612	0.549	0.639	0.654	0.647	0.570	0.648	0.557	0.611
	0.538	0.626	0.652	0.657	0.661	0.680	0.582	0.655	0.645	0.655	0.621	0.608	0.664
	0.599	0.595	0.548	0.559	0.552	0.602	0.681	0.533	0.587	0.592	0.540	0.543	0.632
	0.667	0.574	0.571	0.550	0.535	0.563	0.675	0.626	0.632	0.617	0.674	0.596	0.681
	0.568	0.554	0.638	0.540	0.542	0.657	0.594	0.669	0.541	0.567	0.538	0.680	0.592
	0.587	0.657	0.626	0.678	0.661	0.608	0.675	0.611	0.647	0.537	0.569	0.627	0.678
	0.625	0.588	0.679	0.535	0.586	0.577	0.598	0.679	0.660	0.635	0.671	0.568	0.677
	0.654	0.601	0.659	0.627	0.576	0.585	0.615	0.539	0.594	0.625	0.562	0.620	0.672
	0.560	0.584	0.555	0.625	0.656	0.614	0.617	0.613	0.587	0.595	0.537	0.644	0.538
	0.563	0.655	0.631	0.683	0.534	0.675	0.557	0.619	0.632	0.539	0.578	0.598	0.540
	0.626	0.601	0.681	0.607	0.641	0.577	0.615	0.556	0.626	0.590	0.578	0.631	0.672
	0.567	0.632	0.659	0.567	0.557	0.571	0.605	0.636	0.639	0.654	0.614	0.648	0.616
	0.565	0.671	0.540	0.584	0.650	0.675	0.610	0.670	0.601	0.610	0.566	0.541	0.578
	0.661	0.537											

Wariant 3, Grupa P2, ZP-N1

1.435	1.317	1.288	1.364	1.047	1.356	1.625	1.482	1.179	1.437	1.614	1.397	1.380	1.643
	1.020	1.262	1.491	1.466	1.645	1.459	1.397	1.443	1.512	1.285	1.324	1.431	1.715
	1.723	1.683	1.337	1.590	1.404	1.349	1.455	1.384	1.392	1.030	1.492	1.448	1.325
	1.130	1.447	1.285	1.319	1.552	1.519	1.241	1.500	1.440	1.517	1.355	1.525	1.662
	1.208	1.374	1.518	1.540	1.198	1.515	1.273	1.489	1.143	1.476	1.372	1.606	1.363
	1.418	1.517	1.514	1.558	1.666	1.487	1.299	1.276	1.570	1.651	1.523	1.454	1.304
	1.860	1.363	1.337	1.429	1.472	1.313	1.454	1.247	1.302	1.398	1.442	1.470	1.674
	1.494	1.360	1.444	1.415	1.281	1.242	1.651	1.565	1.537	1.499	1.419	1.507	1.714
	1.462	1.124	1.510	1.417	1.704	1.321	1.463	1.274	1.206	1.338	1.655	1.233	1.285
	1.457	1.490	1.589	1.380	1.077	1.569	1.449	1.608	1.549	1.421	1.410	1.125	1.560
	1.514	1.368	1.502	1.603	1.516	1.395	1.458	1.390	1.278	1.531	1.149	1.484	1.373
	1.468	1.437	1.588	1.079	1.815	1.453	1.544	1.504	1.377	1.455	1.580	1.486	1.364
	1.203	1.228	1.467	1.463	1.511	1.461	1.627	1.204	1.533	1.444	1.446	1.614	1.376
	1.119	1.407	1.614	1.348	1.384	1.533	1.538	1.414	1.161	1.470	1.588	1.627	1.361
	1.386	1.472	1.474	1.418	1.552	1.444	1.486	1.476	1.443	1.639	1.329	1.327	1.412
	1.268	1.363	1.316	1.427	1.417	1.494	1.463	1.295	1.501	1.537	1.589	1.539	1.333
	1.327	1.190	1.670	1.192	1.624	1.324	1.352	1.574	1.431	1.524	1.294	1.310	1.629
	1.190	1.426	1.366	1.333	1.354	1.562	1.304	1.352	1.337	1.392	1.448	1.528	1.292
	1.448	1.387	1.126	1.183	1.575	1.276	1.529	1.493	1.582	1.438	1.518	1.239	1.442
	1.540	1.510											

Wariant 4, Grupa P2, ZP-N1

0.695	0.643	0.791	0.766	0.613	0.643	0.736	0.652	0.601	0.799	0.825	0.606	0.606	0.682
	0.778	0.683	0.860	0.788	0.667	0.828	0.665	0.858	0.769	0.666	0.703	0.866	0.756
	0.863	0.783	0.793	0.733	0.760	0.828	0.863	0.779	0.634	0.633	0.817	0.658	0.798
	0.652	0.779	0.824	0.868	0.710	0.607	0.808	0.600	0.855	0.819	0.852	0.622	0.700
	0.622	0.643	0.838	0.624	0.865	0.738	0.664	0.626	0.737	0.809	0.849	0.757	0.794
	0.861	0.717	0.604	0.840	0.659	0.614	0.629	0.792	0.741	0.614	0.603	0.865	0.799
	0.801	0.738	0.829	0.755	0.608	0.753	0.826	0.614	0.839	0.789	0.694	0.770	0.849

0.828	0.855	0.812	0.633	0.841	0.869	0.739	0.864	0.833	0.675	0.670	0.872	0.784
0.607	0.735	0.704	0.764	0.754	0.858	0.840	0.659	0.763	0.709	0.703	0.641	0.665
0.683	0.675	0.685	0.752	0.801	0.674	0.824	0.793	0.638	0.849	0.740	0.822	0.817
0.781	0.648	0.700	0.761	0.809	0.675	0.693	0.824	0.740	0.697	0.828	0.669	0.686
0.627	0.704	0.627	0.684	0.600	0.866	0.710	0.767	0.774	0.737	0.638	0.648	0.744
0.618	0.601	0.700	0.813	0.807	0.797	0.598	0.635	0.597	0.863	0.640	0.833	0.817
0.606	0.746	0.603	0.665	0.618	0.727	0.790	0.596	0.840	0.750	0.726	0.625	0.695
0.843	0.821	0.768	0.788	0.865	0.861	0.815	0.598	0.645	0.720	0.836	0.803	0.858
0.680	0.748	0.768	0.718	0.815	0.610	0.659	0.604	0.823	0.819	0.670	0.655	0.600
0.801	0.705	0.678	0.697	0.669	0.780	0.768	0.730	0.824	0.782	0.719	0.747	0.612
0.662	0.724	0.819	0.785	0.818	0.852	0.811	0.833	0.684	0.700	0.873	0.679	0.859
0.615	0.721	0.868	0.652	0.859	0.764	0.706	0.831	0.665	0.610	0.751	0.685	0.825
0.826	0.744											

Wariant 5, Grupa P2, ZP-N1

1.263	1.107	1.372	1.160	1.255	1.459	1.590	1.395	1.759	1.081	1.053	1.375	1.280	1.155
	1.455	1.756	1.270	1.734	1.094	1.414	1.257	1.101	1.589	1.430	1.751	1.454	1.125
	1.477	1.753	1.118	1.347	1.056	1.118	1.151	1.527	1.198	1.175	1.400	1.244	1.486
	1.408	1.426	1.327	1.205	1.729	1.142	1.589	1.679	1.538	1.190	1.220	1.741	1.448
	1.561	1.103	1.722	1.062	1.423	1.458	1.296	1.614	1.590	1.412	1.459	1.729	1.600
	1.217	1.090	1.717	1.637	1.276	1.312	1.711	1.251	1.612	1.504	1.746	1.473	1.075
	1.643	1.555	1.514	1.396	1.437	1.551	1.062	1.440	1.378	1.349	1.566	1.448	1.329
	1.663	1.382	1.139	1.761	1.541	1.643	1.199	1.056	1.187	1.585	1.570	1.322	1.569
	1.669	1.656	1.485	1.563	1.290	1.724	1.090	1.414	1.347	1.098	1.635	1.523	1.405
	1.205	1.762	1.695	1.713	1.759	1.702	1.580	1.285	1.055	1.587	1.562	1.567	1.131
	1.680	1.190	1.763	1.649	1.597	1.717	1.228	1.576	1.458	1.043	1.569	1.316	1.293
	1.575	1.159	1.632	1.640	1.685	1.089	1.569	1.673	1.554	1.327	1.225	1.443	1.413
	1.725	1.324	1.659	1.703	1.293	1.769	1.716	1.500	1.588	1.398	1.119	1.058	1.772
	1.122	1.366	1.150	1.452	1.661	1.690	1.398	1.055	1.740	1.121	1.260	1.183	1.134
	1.742	1.476	1.704	1.245	1.414	1.576	1.295	1.740	1.601	1.506	1.110	1.307	1.749
	1.520	1.576	1.071	1.436	1.057	1.115	1.141	1.521	1.747	1.181	1.272	1.356	1.342
	1.505	1.263	1.578	1.302	1.653	1.070	1.502	1.645	1.574	1.384	1.374	1.382	1.152
	1.732	1.402	1.615	1.671	1.234	1.265	1.758	1.145	1.289	1.529	1.351	1.102	1.384
	1.135	1.599	1.364	1.227	1.198	1.501	1.149	1.142	1.216	1.769	1.366	1.449	1.584
	1.148	1.499											

Wariant 6, Grupa P2, ZP-N1

2.766	1.594	1.821	2.128	1.939	2.572	3.157	1.864	2.861	2.088	1.434	2.039	2.200	2.671
	2.327	3.053	2.057	2.732	2.546	3.016	2.626	3.161	2.180	2.395	3.202	2.876	2.658
	2.989	2.588	2.414	3.005	2.408	2.482	2.513	2.323	2.780	2.250	2.292	2.381	1.362
	2.568	1.729	1.995	2.485	2.776	2.818	3.149	2.426	2.290	2.516	3.031	2.526	1.844
	2.151	2.494	2.895	2.465	2.702	2.192	2.970	2.360	2.380	2.493	2.648	2.512	2.468
	2.494	2.031	2.240	2.614	2.506	2.231	2.794	2.438	3.047	3.012	2.608	2.727	2.584
	3.116	2.419	2.890	2.521	2.525	2.879	2.226	2.292	2.816	3.244	2.542	2.816	2.668
	3.282	2.753	1.691	2.190	2.848	2.583	2.049	1.474	2.932	2.500	2.718	3.208	3.262
	3.052	2.534	2.486	2.216	2.074	2.445	2.927	2.738	2.538	2.388	2.800	1.523	2.366
	2.330	2.467	1.994	1.740	2.793	2.884	3.112	2.303	2.643	1.817	2.803	1.947	2.330
	2.396	2.194	2.554	3.066	2.349	2.137	2.058	2.971	2.098	2.578	2.237	1.965	2.287
	3.029	2.177	3.045	2.590	1.912	2.352	2.870	2.669	2.331	2.088	2.136	2.280	2.425
	2.641	2.224	2.325	2.390	2.701	2.859	2.013	2.239	2.892	2.501	2.573	2.067	2.588
	1.880	2.045	1.752	2.785	2.520	3.316	2.046	2.918	2.907	3.362	2.016	2.512	2.321
	2.498	2.518	2.627	2.584	2.695	2.173	2.567	2.105	1.844	2.157	2.658	2.575	2.149
	2.180	2.890	2.513	1.708	3.048	1.995	3.090	2.098	2.413	2.788	2.336	2.818	2.164
	2.947	2.607	2.125	2.668	2.636	2.122	2.767	1.544	2.506	3.404	3.424	2.371	2.553
	2.123	2.394	2.038	2.733	2.318	2.299	3.039	2.605	2.334	2.573	1.679	1.827	2.633
	2.524	2.228	3.739	2.637	2.378	2.311	2.211	2.034	2.176	2.766	1.742	1.712	2.530
	2.516	2.429											

Wariant 7, Grupa P2, ZP-N1

1.957	1.789	1.517	1.662	1.315	1.748	1.952	1.275	1.465	1.966	2.012	1.914	1.949	1.831
	1.465	2.185	1.499	1.521	1.593	1.869	1.861	2.195	1.989	1.442	1.478	1.903	1.876
	2.196	1.507	1.881	2.034	2.090	1.704	1.729	1.476	1.984	1.798	2.045	1.572	1.739
	1.526	1.797	1.997	1.799	1.282	2.176	2.160	1.494	1.416	1.290	1.309	1.849	2.144
	2.167	2.168	2.167	2.118	1.821	1.496	2.108	1.516	1.463	1.797	1.456	1.831	1.677
	2.126	1.458	1.384	2.116	2.218	1.903	2.203	1.814	1.359	1.727	1.867	2.062	1.786
	2.205	1.607	2.069	1.932	1.937	1.333	2.088	2.028	1.255	2.107	1.278	1.503	1.368
	1.416	2.046	1.898	2.170	1.758	1.312	1.575	1.630	1.268	1.945	1.811	1.661	1.574
	1.333	1.752	1.897	1.596	2.085	1.812	1.888	1.738	1.826	1.813	1.967	1.844	2.190
	1.692	1.780	1.723	1.788	1.839	1.399	1.302	1.537	2.094	2.049	1.396	1.784	1.354
	1.598	2.155	2.010	1.700	1.399	2.115	2.114	1.404	2.022	1.785	1.377	1.262	1.540
	1.962	1.955	1.749	1.282	1.693	2.214	1.774	1.438	1.731	1.444	1.955	2.157	1.756
	1.268	1.654	1.355	2.123	1.795	1.524	1.931	1.326	1.318	1.762	1.989	1.904	1.512
	1.969	1.323	1.305	1.514	1.606	1.665	1.945	1.402	2.047	1.674	1.340	1.413	1.420
	1.344	1.430	1.760	1.792	2.130	1.895	2.082	1.314	1.815	1.891	1.515	1.660	1.729
	1.442	1.323	1.390	1.859	1.461	1.290	1.675	1.470	1.473	1.626	1.866	1.304	1.843
	1.560	1.548	1.509	1.734	1.487	2.222	2.129	1.587	1.805	1.780	1.276	1.321	1.397

	1.320	1.737	2.080	1.604	1.825	1.559	1.740	2.011	1.441	1.881	1.798	1.738	2.175
	1.683	2.138	1.333	1.557	1.940	1.321	1.377	1.537	1.598	1.380	1.687	1.369	1.974
	1.500	2.117											
Wariant 8, Grupa P2, ZP-N1													
0.405	0.395	0.411	0.472	0.484	0.608	0.489	0.394	0.448	0.430	0.453	0.551	0.445	0.485
	0.443	0.466	0.404	0.513	0.549	0.588	0.547	0.613	0.494	0.477	0.501	0.558	0.526
	0.558	0.402	0.577	0.381	0.632	0.591	0.480	0.499	0.386	0.435	0.503	0.534	0.579
	0.441	0.494	0.635	0.491	0.614	0.568	0.541	0.479	0.552	0.618	0.407	0.526	0.480
	0.511	0.487	0.522	0.623	0.450	0.455	0.444	0.486	0.450	0.463	0.436	0.631	0.504
	0.526	0.535	0.464	0.390	0.599	0.561	0.599	0.416	0.553	0.419	0.441	0.517	0.576
	0.581	0.628	0.541	0.429	0.634	0.409	0.452	0.439	0.599	0.414	0.423	0.558	0.591
	0.620	0.582	0.633	0.383	0.577	0.390	0.582	0.429	0.572	0.532	0.465	0.450	0.612
	0.543	0.463	0.525	0.613	0.499	0.491	0.525	0.487	0.532	0.509	0.484	0.402	0.504
	0.458	0.621	0.410	0.628	0.630	0.476	0.511	0.424	0.638	0.554	0.606	0.451	0.627
	0.487	0.629	0.545	0.565	0.487	0.564	0.570	0.485	0.611	0.639	0.552	0.622	0.452
	0.634	0.449	0.411	0.561	0.392	0.608	0.518	0.636	0.500	0.564	0.601	0.486	0.518
	0.599	0.619	0.634	0.509	0.611	0.489	0.477	0.635	0.431	0.417	0.523	0.404	0.583
	0.613	0.608	0.424	0.582	0.390	0.638	0.402	0.540	0.551	0.439	0.447	0.572	0.466
	0.557	0.438	0.382	0.526	0.616	0.610	0.559	0.583	0.440	0.464	0.402	0.391	0.560
	0.460	0.588	0.455	0.537	0.477	0.537	0.448	0.578	0.521	0.627	0.390	0.443	0.557
	0.402	0.433	0.602	0.500	0.597	0.539	0.431	0.633	0.624	0.594	0.474	0.623	0.405
	0.410	0.442	0.521	0.529	0.422	0.502	0.627	0.498	0.459	0.640	0.473	0.519	0.503
	0.452	0.573	0.593	0.566	0.401	0.431	0.547	0.472	0.624	0.618	0.491	0.583	0.432
	0.581	0.400											
Wariant 9, Grupa P2, ZP-N1													
1.328	1.489	1.079	1.166	1.263	1.147	1.500	0.963	1.344	1.054	1.058	1.507	1.376	1.314
	1.391	1.551	0.877	1.105	1.472	1.096	1.186	1.139	1.136	0.853	0.995	1.672	1.265
	1.088	1.037	1.292	0.896	1.145	1.272	1.327	0.897	1.116	1.238	0.889	1.102	1.199
	1.123	1.124	1.288	1.385	1.376	0.929	1.090	1.530	1.620	1.338	1.447	1.561	1.142
	1.426	1.208	1.169	1.339	1.103	1.017	1.136	0.838	1.046	1.243	1.396	1.202	1.359
	1.496	1.376	1.490	1.187	1.228	1.015	0.976	1.279	0.848	1.063	1.108	1.336	1.543
	1.087	1.321	1.410	1.560	1.226	1.182	1.234	1.577	1.052	0.721	1.255	1.490	1.403
	0.637	1.486	1.208	1.565	1.280	1.271	1.279	0.944	1.372	1.080	1.070	0.932	0.831
	1.011	1.015	1.195	0.987	1.461	0.849	1.175	1.336	1.175	1.139	1.337	1.628	1.269
	1.406	1.267	1.142	0.984	1.198	1.510	0.858	1.106	1.246	1.234	1.390	1.096	1.312
	1.175	1.339	1.593	1.422	1.223	1.208	1.408	0.742	1.565	1.237	1.285	1.277	1.036
	0.864	1.464	1.403	1.344	1.459	1.286	1.218	1.560	1.121	0.801	1.039	1.246	1.329
	1.378	1.462	1.307	1.071	1.172	1.672	0.857	1.439	1.139	1.519	0.912	1.092	1.270
	1.000	1.419	0.921	1.177	1.471	0.852	1.145	1.528	1.168	1.056	1.166	1.355	0.805
	1.134	0.904	1.315	1.680	1.978	1.418	1.561	0.808	1.579	1.464	1.654	0.832	0.799
	1.380	1.441	1.426	1.023	1.533	1.041	1.323	1.294	0.968	1.095	1.393	1.482	1.278
	1.499	1.522	1.235	1.207	1.234	1.653	1.118	1.116	1.490	0.893	1.008	1.543	0.930
	1.073	1.281	1.450	1.261	1.417	1.421	1.256	1.055	1.081	1.258	1.084	1.503	0.861
	1.203	1.134	1.348	1.335	0.337	1.088	1.272	1.221	1.055	1.168	0.938	1.090	1.487
	0.987	0.994											
Wariant 10, Grupa P2, ZP-N1													
0.581	0.567	0.543	0.595	0.594	0.508	0.579	0.542	0.550	0.511	0.522	0.558	0.580	0.555
	0.516	0.522	0.470	0.556	0.586	0.539	0.515	0.477	0.545	0.564	0.496	0.513	0.517
	0.507	0.566	0.583	0.493	0.536	0.518	0.543	0.488	0.558	0.577	0.495	0.523	0.565
	0.569	0.516	0.557	0.534	0.479	0.470	0.495	0.540	0.577	0.554	0.551	0.564	0.564
	0.497	0.504	0.509	0.515	0.524	0.479	0.559	0.587	0.583	0.505	0.574	0.548	0.572
	0.542	0.487	0.570	0.502	0.593	0.511	0.526	0.495	0.502	0.523	0.554	0.595	0.493
	0.570	0.521	0.532	0.478	0.540	0.485	0.483	0.494	0.577	0.585	0.474	0.571	0.519
	0.492	0.520	0.548	0.476	0.504	0.588	0.493	0.564	0.511	0.501	0.551	0.471	0.598
	0.592	0.489	0.529	0.564	0.594	0.486	0.525	0.561	0.585	0.578	0.552	0.512	0.571
	0.573	0.501	0.523	0.542	0.567	0.554	0.595	0.482	0.501	0.577	0.545	0.588	0.584
	0.515	0.535	0.533	0.488	0.473	0.503	0.496	0.583	0.488	0.595	0.588	0.515	0.514
	0.496	0.484	0.478	0.487	0.551	0.572	0.472	0.472	0.472	0.579	0.563	0.503	0.493
	0.489	0.568	0.497	0.505	0.506	0.476	0.520	0.581	0.570	0.559	0.476	0.548	0.482
	0.523	0.532	0.536	0.501	0.556	0.579	0.584	0.584	0.520	0.559	0.573	0.492	0.510
	0.483	0.510	0.502	0.593	0.530	0.500	0.502	0.495	0.571	0.541	0.470	0.542	0.566
	0.524	0.521	0.594	0.510	0.581	0.500	0.505	0.470	0.475	0.585	0.520	0.568	0.495
	0.526	0.590	0.526	0.485	0.533	0.548	0.594	0.518	0.553	0.495	0.476	0.474	0.541
	0.489	0.551	0.488	0.544	0.570	0.573	0.562	0.490	0.486	0.534	0.518	0.564	0.529
	0.562	0.562	0.504	0.512	0.524	0.486	0.536	0.508	0.472	0.520	0.571	0.512	0.538
	0.574	0.520											
Wariant 11, Grupa P2, ZP-N1													
0.774	1.160	2.134	1.826	1.727	1.114	1.026	2.071	1.923	0.766	1.474	0.982	1.561	1.705
	1.041	1.381	1.515	1.121	1.961	1.044	1.457	2.249	0.780	1.388	0.972	1.662	1.756
	0.267	2.506	1.776	1.747	1.223	1.323	1.849	1.693	1.275	2.352	1.935	1.111	1.761
	1.015	1.796	1.485	1.813	1.125	2.209	1.818	1.775	1.576	1.160	1.133	1.728	1.978
	1.568	0.813	2.087	1.052	2.047	1.376	2.426	1.531	1.904	1.025	1.632	2.005	1.057
	2.074	1.489	1.324	2.707	1.963	1.889	1.452	1.810	1.451	1.516	1.111	1.813	1.144

	1.529	2.348	1.265	1.379	1.621	1.868	1.538	1.933	1.814	2.728	2.359	2.567	1.286
	1.655	1.466	1.573	1.743	1.604	1.431	1.860	1.551	1.332	0.897	2.062	1.911	0.761
	1.716	2.442	1.341	1.934	1.878	0.899	2.345	2.422	1.587	1.635	1.490	0.970	1.351
	1.292	1.795	1.561	1.828	1.654	0.788	2.098	1.807	1.504	2.486	1.912	1.969	1.854
	1.198	1.113	1.841	1.816	1.980	1.037	1.546	1.408	1.834	1.986	1.455	1.432	2.207
	1.114	1.674	1.685	1.387	1.451	2.560	1.095	1.136	1.961	1.345	1.478	0.617	1.529
	1.126	1.133	1.708	1.498	1.341	2.112	2.291	1.695	0.844	1.076	1.573	1.000	1.934
	1.108	1.649	1.683	1.575	1.600	1.656	1.779	1.727	1.889	2.035	1.590	2.401	1.626
	0.830	1.833	1.664	1.549	1.430	2.104	2.343	1.526	2.324	2.157	1.324	1.875	1.548
	1.911	2.154	1.687	2.233	2.839	1.643	1.673	1.310	2.194	1.413	1.554	1.730	0.855
	1.294	1.981	2.335	2.150	1.160	2.478	1.843	1.539	1.881	1.048	1.876	1.162	1.729
	1.547	0.552	0.664	1.770	1.360	0.860	1.410	1.433	2.033	1.870	1.371	1.342	1.233
	2.005	0.981	2.022	1.868	1.386	1.645	1.810	0.696	1.268	1.584	0.967	1.730	2.316
	2.011	1.692											
Wariant 12, Grupa P2, ZP-N1													
0.995	1.005	0.861	0.939	0.877	0.987	0.937	0.857	0.871	0.995	0.833	0.864	0.870	0.852
	0.992	0.847	0.858	0.855	0.835	0.966	0.966	0.921	0.908	0.861	1.000	0.936	0.884
	0.931	0.983	0.807	0.908	0.949	0.950	0.868	0.936	0.963	0.899	0.915	0.848	0.832
	0.857	0.874	0.912	0.955	0.879	0.968	0.881	1.007	0.961	0.937	0.939	0.940	0.871
	0.895	0.848	0.840	0.978	0.826	0.950	0.909	0.850	0.851	0.940	0.950	0.988	0.986
	0.921	0.833	0.841	0.822	0.873	0.883	0.810	0.841	0.903	0.907	0.952	0.861	0.985
	0.847	0.896	0.974	0.831	0.932	0.965	0.904	0.974	0.886	0.850	1.002	0.979	0.988
	1.009	1.009	1.002	0.906	0.960	0.893	0.918	0.812	0.945	0.954	0.860	0.914	0.933
	0.994	0.828	0.904	0.822	0.909	0.854	0.833	1.001	0.984	0.878	0.831	0.898	0.818
	0.972	0.958	0.872	0.969	0.831	0.977	0.817	0.855	0.914	0.906	0.826	0.875	0.921
	0.845	0.917	0.805	0.977	0.935	0.890	0.895	0.813	0.810	0.971	0.956	1.005	0.897
	0.861	0.875	0.915	0.850	0.860	0.829	0.847	0.904	0.976	0.988	0.901	1.007	0.811
	0.928	0.817	0.934	0.869	0.895	0.816	0.982	0.997	0.835	0.855	0.850	0.883	0.854
	0.880	0.809	0.917	0.951	0.989	0.859	0.810	0.881	0.881	0.877	0.931	0.805	0.931
	0.897	0.989	0.993	0.836	0.887	0.991	0.805	0.959	0.867	0.835	0.810	0.811	0.952
	0.891	0.967	0.877	0.883	1.007	0.864	0.942	0.979	0.929	0.951	0.895	0.865	0.862
	0.910	0.823	0.909	0.870	0.939	1.014	1.000	0.844	0.816	0.816	0.963	0.822	0.810
	0.838	0.903	1.005	1.012	1.007	0.806	0.841	0.803	0.889	0.937	0.818	0.806	0.804
	0.861	0.954	0.907	0.917	0.953	0.925	0.981	0.896	0.838	0.972	0.886	0.997	0.955
	1.011	0.821											
Wariant 13, Grupa P2, ZP-N1													
1.631	1.591	2.542	1.504	2.441	1.627	1.528	2.119	1.405	1.893	1.895	1.484	1.526	2.714
	1.068	1.144	1.604	1.897	2.664	1.499	1.524	1.764	2.032	1.806	1.546	2.122	2.097
	2.004	0.628	1.399	0.941	1.697	1.763	2.071	1.588	1.682	1.309	2.178	1.692	1.870
	1.614	1.541	1.279	1.949	1.990	1.675	2.022	1.654	1.764	1.807	2.289	1.696	1.813
	1.446	1.989	2.210	2.057	1.155	1.929	1.663	1.590	1.469	2.239	2.329	1.718	1.499
	2.032	1.334	2.028	2.628	2.194	1.689	1.585	2.372	1.355	1.612	1.752	2.382	1.540
	1.405	2.187	2.547	1.903	1.958	1.770	1.596	1.120	1.676	1.493	1.435	1.811	1.255
	0.882	1.752	1.851	1.717	1.929	1.755	1.560	1.202	2.332	2.216	1.773	1.370	1.332
	2.270	1.672	1.792	1.723	1.594	1.517	1.000	1.203	2.490	1.724	2.164	1.911	2.779
	3.432	1.496	0.953	1.995	1.659	1.667	1.629	2.056	2.186	1.981	2.494	1.872	1.880
	1.604	1.777	2.226	1.977	1.535	1.674	2.333	2.504	2.189	2.385	1.907	1.967	2.600
	1.697	2.267	1.431	1.503	2.269	1.107	1.408	1.041	2.448	1.893	1.945	1.244	2.124
	1.733	2.517	2.384	2.287	1.517	1.963	1.692	1.907	2.668	1.581	1.900	0.893	1.621
	1.963	1.878	2.209	1.721	2.532	1.843	1.706	1.949	1.476	2.066	2.119	2.010	1.956
	2.559	1.533	1.761	1.526	2.101	1.795	1.704	2.069	2.587	1.561	1.994	1.164	1.704
	2.717	2.128	2.076	1.847	1.984	2.348	1.890	1.701	1.798	2.269	1.508	1.997	1.553
	1.975	1.609	1.968	1.548	1.939	0.998	1.993	2.048	1.639	1.983	1.606	0.846	2.699
	1.669	1.252	1.855	1.836	2.361	2.357	2.393	1.425	2.290	2.608	1.576	2.581	1.765
	1.837	2.040	1.911	2.361	2.419	1.979	2.264	2.149	2.153	2.167	1.261	1.836	1.532
	1.954	2.141											
Wariant 14, Grupa P2, ZP-N1													
1.143	1.003	1.198	1.196	1.147	1.148	1.136	1.167	1.234	1.145	1.256	1.133	1.027	0.967
	1.021	1.095	0.969	1.221	1.004	1.080	1.165	1.014	1.306	1.289	1.174	1.075	1.282
	1.014	1.097	0.997	1.277	1.017	1.095	1.010	1.003	1.114	1.132	1.110	1.007	1.206
	1.306	1.124	1.139	1.096	0.960	1.004	1.034	1.263	1.251	0.987	1.179	0.969	1.131
	1.260	0.976	1.272	1.075	1.129	0.971	1.080	1.307	1.288	1.010	0.961	0.956	1.286
	1.123	1.087	1.027	1.163	1.199	1.183	1.146	1.163	1.251	1.076	1.182	1.308	1.177
	1.091	1.304	1.199	1.109	1.250	1.192	1.112	1.270	1.050	1.254	1.174	0.981	1.255
	1.207	1.117	1.110	1.252	1.030	0.973	1.019	1.298	1.068	1.278	1.108	1.039	1.280
	0.988	1.281	1.123	1.076	1.002	1.071	1.101	1.161	1.089	1.062	1.125	0.957	0.990
	0.957	1.012	1.251	1.025	1.088	0.963	0.986	1.128	1.286	1.067	1.082	1.188	1.052
	1.039	1.311	1.249	1.027	1.249	0.981	1.222	1.095	1.110	1.281	1.178	1.231	1.277
	1.036	1.145	1.130	1.047	1.289	1.136	1.135	1.007	1.146	1.035	1.247	1.241	1.016
	1.070	1.067	1.196	1.057	1.073	1.043	1.211	1.275	1.048	1.066	1.035	1.134	1.232
	1.096	1.087	1.184	0.957	1.279	1.064	0.964	0.960	1.223	1.291	1.079	1.255	1.289
	1.063	1.196	1.021	1.236	1.154	1.130	1.228	1.240	1.176	1.079	1.028	0.992	1.104
	1.017	1.187	1.161	1.234	1.012	1.282	1.151	1.285	1.063	1.074	1.011	1.164	1.157

[illegible]