ERRATUM

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Equations for Estimating Horizontal Response Spectra and Peak Acceleration from Western North American Earthquakes: A Summary of Recent Work

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Equation (6) for the contribution to the variance of the predicted random component of ground motion due to component-to-component variation is in error by a factor of 2. The proper equation is

$$\sigma_c^2 = \frac{1}{nrecs} \sum_{j=1}^{nrecs} \frac{\left(\ln Y_{1j} - \ln Y_{2j}\right)^2}{4}, \tag{6}$$

The same erroneous equation appears as equation (3) in Boore *et al.* (1993). As a result of the error, the column labeled "σ_C" in Table 8 is too large by a factor of $\sqrt{2}$, and the error carries through to the columns labeled "σ_r" and "σ_{lnY}". The corrected Table 8 is included here, with an added column giving the ratio of the corrected and erroneous values of the total standard deviation of the predicted value of the random component of ground motion (σ_{lnY}; for brevity the column in the table is labeled "n/o" for "new" divided by "old"). Because the component-to-component variance is smaller than the variance of the geometric mean (compare columns "σ_C" and "σ_1"), and because variances are added to obtain the total variance, the impact of the error on the total standard deviation is minor. (The ratios of the standard deviation of the random-component ground motion to the geometric-mean ground motion, sometimes used in seismic hazard calculations, differ by amounts almost identical to the "n/o" column in the table included in this erratum. For example, at 1 sec. period the ratio is 1.18 and 1.09 for the erroneous and corrected values of σ_C, respectively, with a ratio of the ratio equal to 0.92.)

The error also propagated to two Spudich *et al.* papers (1997, 1999). The σ_3 values in Table 3 of Spudich *et al.* (1997) and Table 2 of Spudich *et al.* (1999) are too large by a factor of $\sqrt{2}$.

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TABLE 8 (corrected)

("***n/o***" stands for the ratio of the new (corrected) and old (erroneous) values of σ_{lnY})

Period	B_{1SS}	B_{1RV}	B_{1ALL}	B_2	B_3	B_5	B_V	V_A	*H*	σ_1	σ_C	σ_r	σ_e	σ_{lnY}	*n/o*
0.000	-0.313	-0.117	-0.242	0.527	0.000	-0.778	-0.371	1396	5.57	0.431	0.160	0.460	0.184	0.495	0.95
0.100	1.006	1.087	1.059	0.753	-0.226	-0.934	-0.212	1112	6.27	0.440	0.134	0.460	0.000	0.460	0.96
0.110	1.072	1.164	1.130	0.732	-0.230	-0.937	-0.211	1291	6.65	0.437	0.141	0.459	0.000	0.459	0.95
0.120	1.109	1.215	1.174	0.721	-0.233	-0.939	-0.215	1452	6.91	0.437	0.148	0.462	0.000	0.462	0.95
0.130	1.128	1.246	1.200	0.711	-0.233	-0.939	-0.221	1596	7.08	0.435	0.153	0.461	0.000	0.461	0.95
0.140	1.135	1.261	1.208	0.707	-0.230	-0.938	-0.228	1718	7.18	0.435	0.158	0.463	0.000	0.463	0.95
0.150	1.128	1.264	1.204	0.702	-0.228	-0.937	-0.238	1820	7.23	0.435	0.163	0.464	0.000	0.464	0.94
0.160	1.112	1.257	1.192	0.702	-0.226	-0.935	-0.248	1910	7.24	0.435	0.166	0.466	0.000	0.466	0.94
0.170	1.090	1.242	1.173	0.702	-0.221	-0.933	-0.258	1977	7.21	0.435	0.169	0.467	0.000	0.467	0.94
0.180	1.063	1.222	1.151	0.705	-0.216	-0.930	-0.270	2037	7.16	0.435	0.173	0.468	0.002	0.468	0.94
0.190	1.032	1.198	1.122	0.709	-0.212	-0.927	-0.281	2080	7.10	0.435	0.176	0.469	0.005	0.469	0.94
0.200	0.999	1.170	1.089	0.711	-0.207	-0.924	-0.292	2118	7.02	0.435	0.177	0.470	0.009	0.470	0.94
0.220	0.925	1.104	1.019	0.721	-0.198	-0.918	-0.315	2158	6.83	0.437	0.182	0.474	0.016	0.474	0.93
0.240	0.847	1.033	0.941	0.732	-0.189	-0.912	-0.338	2178	6.62	0.437	0.185	0.475	0.025	0.475	0.93
0.260	0.764	0.958	0.861	0.744	-0.180	-0.906	-0.360	2173	6.39	0.437	0.189	0.476	0.032	0.477	0.93
0.280	0.681	0.881	0.780	0.758	-0.168	-0.899	-0.381	2158	6.17	0.440	0.192	0.480	0.039	0.482	0.93
0.300	0.598	0.803	0.700	0.769	-0.161	-0.893	-0.401	2133	5.94	0.440	0.195	0.481	0.048	0.484	0.93
0.320	0.518	0.725	0.619	0.783	-0.152	-0.888	-0.420	2104	5.72	0.442	0.197	0.484	0.055	0.487	0.93
0.340	0.439	0.648	0.540	0.794	-0.143	-0.882	-0.438	2070	5.50	0.444	0.199	0.486	0.064	0.491	0.93
0.360	0.361	0.570	0.462	0.806	-0.136	-0.877	-0.456	2032	5.30	0.444	0.200	0.487	0.071	0.492	0.93
0.380	0.286	0.495	0.385	0.820	-0.127	-0.872	-0.472	1995	5.10	0.447	0.202	0.491	0.078	0.497	0.93
0.400	0.212	0.423	0.311	0.831	-0.120	-0.867	-0.487	1954	4.91	0.447	0.204	0.491	0.085	0.499	0.93
0.420	0.140	0.352	0.239	0.840	-0.113	-0.862	-0.502	1919	4.74	0.449	0.205	0.494	0.092	0.502	0.93
0.440	0.073	0.282	0.169	0.852	-0.108	-0.858	-0.516	1884	4.57	0.449	0.206	0.494	0.099	0.504	0.92
0.460	0.005	0.217	0.102	0.863	-0.101	-0.854	-0.529	1849	4.41	0.451	0.209	0.497	0.104	0.508	0.92
0.480	-0.058	0.151	0.036	0.873	-0.097	-0.850	-0.541	1816	4.26	0.451	0.210	0.497	0.111	0.510	0.93
0.500	-0.122	0.087	-0.025	0.884	-0.090	-0.846	-0.553	1782	4.13	0.454	0.211	0.501	0.115	0.514	0.92
0.550	-0.268	-0.063	-0.176	0.907	-0.078	-0.837	-0.579	1710	3.82	0.456	0.214	0.504	0.129	0.520	0.92
0.600	-0.401	-0.203	-0.314	0.928	-0.069	-0.830	-0.602	1644	3.57	0.458	0.216	0.507	0.143	0.526	0.93
0.650	-0.523	-0.331	-0.440	0.946	-0.060	-0.823	-0.622	1592	3.36	0.461	0.218	0.510	0.154	0.533	0.93
0.700	-0.634	-0.452	-0.555	0.962	-0.053	-0.818	-0.639	1545	3.20	0.463	0.220	0.513	0.166	0.539	0.93
0.750	-0.737	-0.562	-0.661	0.979	-0.046	-0.813	-0.653	1507	3.07	0.465	0.221	0.515	0.175	0.544	0.93
0.800	-0.829	-0.666	-0.760	0.992	-0.041	-0.809	-0.666	1476	2.98	0.467	0.223	0.517	0.184	0.549	0.93
0.850	-0.915	-0.761	-0.851	1.006	-0.037	-0.805	-0.676	1452	2.92	0.467	0.226	0.519	0.191	0.553	0.92
0.900	-0.993	-0.848	-0.933	1.018	-0.035	-0.802	-0.685	1432	2.89	0.470	0.228	0.522	0.200	0.559	0.93
0.950	-1.066	-0.932	-1.010	1.027	-0.032	-0.800	-0.692	1416	2.88	0.472	0.230	0.525	0.207	0.564	0.93
1.000	-1.133	-1.009	-1.080	1.036	-0.032	-0.798	-0.698	1406	2.90	0.474	0.230	0.527	0.214	0.569	0.93
1.100	-1.249	-1.145	-1.208	1.052	-0.030	-0.795	-0.706	1396	2.99	0.477	0.233	0.531	0.226	0.577	0.93
1.200	-1.345	-1.265	-1.315	1.064	-0.032	-0.794	-0.710	1400	3.14	0.479	0.236	0.534	0.235	0.583	0.93
1.300	-1.428	-1.370	-1.407	1.073	-0.035	-0.793	-0.711	1416	3.36	0.481	0.239	0.537	0.244	0.590	0.93
1.400	-1.495	-1.460	-1.483	1.080	-0.039	-0.794	-0.709	1442	3.62	0.484	0.241	0.541	0.251	0.596	0.93
1.500	-1.552	-1.538	-1.550	1.085	-0.044	-0.796	-0.704	1479	3.92	0.486	0.244	0.544	0.256	0.601	0.93
1.600	-1.598	-1.608	-1.605	1.087	-0.051	-0.798	-0.697	1524	4.26	0.488	0.246	0.547	0.262	0.606	0.93
1.700	-1.634	-1.668	-1.652	1.089	-0.058	-0.801	-0.689	1581	4.62	0.490	0.249	0.550	0.267	0.611	0.93
1.800	-1.663	-1.718	-1.689	1.087	-0.067	-0.804	-0.679	1644	5.01	0.493	0.251	0.553	0.269	0.615	0.93
1.900	-1.685	-1.763	-1.720	1.087	-0.074	-0.808	-0.667	1714	5.42	0.493	0.254	0.555	0.274	0.619	0.92
2.000	-1.699	-1.801	-1.743	1.085	-0.085	-0.812	-0.655	1795	5.85	0.495	0.256	0.557	0.276	0.622	0.93