

Erratum

Line formation in solar granulation

IV. [O I], O I and OH lines and the photospheric O abundance

M. Asplund¹, N. Grevesse^{2,3}, A. J. Sauval⁴, C. Allende Prieto⁵, and D. Kiselman⁶

¹ Research School of Astronomy and Astrophysics, Mt. Stromlo Observatory, Cotter Rd., Weston, ACT 2611, Australia
e-mail: martin@mso.anu.edu.au

² Centre Spatial de Liège, Université de Liège, avenue Pré Aily, 4031 Angleur-Liège, Belgium

³ Institut d'Astrophysique et de Géophysique, Université de Liège, Allée du 6 Août, 17, B5C, 4000 Liège, Belgium

⁴ Observatoire Royal de Belgique, avenue circulaire, 3, 1180 Bruxelles, Belgium

⁵ McDonald Observatory and Department of Astronomy, University of Texas, Austin, TX 78712-1083, USA

⁶ The Institute for Solar Physics of the Royal Swedish Academy of Sciences, AlbaNova University Centre,
106 91 Stockholm, Sweden

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Due to an error in the conversion to SI units when constructing Table 1, the densities (ρ) and their rms-scatter ($\Delta\rho_{\text{rms}}$) are all too small by a factor of 10^6 . For completeness, the full corrected table is given below. The calculations were done with correct values and hence all results remain intact.

Table 1. Temporally and spatially averaged atmospheric stratification of the 3D solar surface convection simulation used for the 3D spectral line formation presented here: temperature, density, gas pressure, electron pressure and vertical velocity (positive velocities inward) as well as their rms-scatter. The spatial averaging has been performed over surfaces of the same continuum optical depths at 500 nm. Note that the original 3D model extends significantly above and below the optical depths for which the mean structure has been interpolated to and tabulated. We emphasize that it is not possible to explain all 3D effects by a comparison of such an averaged 3D model with existing 1D models due to the absence of atmospheric inhomogeneities.

$\log\tau_{500\text{ nm}}$	T [K]	ΔT_{rms} [K]	ρ [kg/m ³]	$\Delta\rho_{\text{rms}}$ [kg/m ³]	P_{gas} [Pa]	$\Delta P_{\text{gas,rms}}$ [Pa]	P_e [Pa]	$\Delta P_{e,\text{rms}}$ [Pa]	v_z [km s ⁻¹]	$\Delta v_{z,\text{rms}}$ [km s ⁻¹]
-5.00	4143	153	8.28E-07	8.39E-08	2.34E+01	3.16E+00	2.09E-03	4.56E-04	0.06	1.53
-4.80	4169	161	1.09E-06	1.16E-07	3.10E+01	4.40E+00	2.73E-03	6.39E-04	0.04	1.46
-4.60	4198	167	1.43E-06	1.55E-07	4.10E+01	5.89E+00	3.58E-03	8.65E-04	0.03	1.37
-4.40	4230	172	1.88E-06	1.99E-07	5.41E+01	7.54E+00	4.69E-03	1.14E-03	0.03	1.29
-4.20	4263	176	2.47E-06	2.44E-07	7.13E+01	9.30E+00	6.11E-03	1.47E-03	0.03	1.22
-4.00	4297	180	3.21E-06	2.90E-07	9.34E+01	1.12E+01	7.94E-03	1.88E-03	0.03	1.14
-3.80	4332	184	4.16E-06	3.40E-07	1.22E+02	1.32E+01	1.03E-02	2.39E-03	0.03	1.07
-3.60	4368	188	5.36E-06	3.99E-07	1.58E+02	1.55E+01	1.32E-02	3.03E-03	0.03	1.02
-3.40	4402	192	6.89E-06	4.69E-07	2.04E+02	1.81E+01	1.69E-02	3.84E-03	0.03	0.96
-3.20	4435	197	8.82E-06	5.56E-07	2.63E+02	2.11E+01	2.16E-02	4.88E-03	0.03	0.92
-3.00	4467	202	1.13E-05	6.75E-07	3.38E+02	2.46E+01	2.74E-02	6.22E-03	0.04	0.89
-2.80	4500	207	1.44E-05	8.38E-07	4.33E+02	2.89E+01	3.48E-02	7.93E-03	0.04	0.86
-2.60	4535	212	1.83E-05	1.06E-06	5.55E+02	3.43E+01	4.41E-02	1.01E-02	0.04	0.84
-2.40	4571	217	2.32E-05	1.35E-06	7.10E+02	4.11E+01	5.59E-02	1.30E-02	0.05	0.84
-2.20	4612	221	2.95E-05	1.72E-06	9.08E+02	4.98E+01	7.12E-02	1.67E-02	0.06	0.85
-2.00	4658	224	3.75E-05	2.16E-06	1.16E+03	6.05E+01	9.12E-02	2.14E-02	0.06	0.88
-1.80	4711	225	4.77E-05	2.68E-06	1.49E+03	7.46E+01	1.17E-01	2.75E-02	0.07	0.93
-1.60	4773	221	6.05E-05	3.27E-06	1.92E+03	9.27E+01	1.53E-01	3.50E-02	0.08	1.00
-1.40	4849	213	7.65E-05	3.94E-06	2.46E+03	1.17E+02	2.00E-01	4.41E-02	0.09	1.10
-1.20	4944	196	9.61E-05	4.83E-06	3.14E+03	1.52E+02	2.67E-01	5.44E-02	0.10	1.22
-1.00	5066	170	1.20E-04	6.20E-06	4.01E+03	2.05E+02	3.61E-01	6.57E-02	0.10	1.38
-0.80	5221	141	1.47E-04	8.30E-06	5.08E+03	2.83E+02	5.02E-01	8.04E-02	0.10	1.56
-0.60	5420	126	1.79E-04	1.12E-05	6.40E+03	3.89E+02	7.44E-01	1.24E-01	0.09	1.76
-0.40	5676	154	2.13E-04	1.57E-05	7.97E+03	5.27E+02	1.27E+00	3.48E-01	0.08	1.99
-0.20	6000	227	2.46E-04	2.40E-05	9.72E+03	7.63E+02	2.64E+00	1.20E+00	0.06	2.22
0.00	6412	332	2.70E-04	3.65E-05	1.14E+04	1.15E+03	6.71E+00	4.08E+00	-0.01	2.47
0.20	6919	481	2.82E-04	5.17E-05	1.28E+04	1.66E+03	1.98E+01	1.47E+01	-0.13	2.71
0.40	7500	645	2.85E-04	6.63E-05	1.39E+04	2.21E+03	5.69E+01	4.38E+01	-0.27	2.91
0.60	8084	759	2.83E-04	7.78E-05	1.49E+04	2.74E+03	1.33E+02	9.44E+01	-0.39	3.05
0.80	8619	813	2.81E-04	8.64E-05	1.58E+04	3.26E+03	2.52E+02	1.60E+02	-0.49	3.14
1.00	9086	817	2.79E-04	9.30E-05	1.67E+04	3.77E+03	4.08E+02	2.30E+02	-0.56	3.19
1.20	9478	782	2.79E-04	9.82E-05	1.76E+04	4.30E+03	5.90E+02	2.92E+02	-0.61	3.20
1.40	9797	719	2.82E-04	1.02E-04	1.86E+04	4.83E+03	7.82E+02	3.36E+02	-0.64	3.18
1.60	10060	644	2.87E-04	1.06E-04	1.97E+04	5.37E+03	9.84E+02	3.64E+02	-0.66	3.13
1.80	10290	573	2.96E-04	1.08E-04	2.09E+04	5.89E+03	1.21E+03	3.95E+02	-0.67	3.06
2.00	10493	509	3.09E-04	1.10E-04	2.25E+04	6.38E+03	1.46E+03	4.36E+02	-0.67	2.96