

Dust driven mass loss from carbon stars as a function of stellar parameters

I. A grid of solar-metallicity wind models (Corrigendum)

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Aims. The purpose of this corrigendum is to point out that a handful of models in the original paper were computed with faulty initial structures.

Methods. Using exactly the same modelling methods we have recomputed the faulty models with new initial structures.

Results. The new results slightly changes some of the trends in the wind properties with stellar parameters, but the overall effects are small. The conclusions are not affected

Key words. stars: AGB and post-AGB – stars: atmospheres – stars: carbon – circumstellar matter – stars: evolution – errata, addenda

While recomputing parts of the grid of wind models (Mattsson et al. 2010) in order to obtain extended time sequences for modeling of spectral variation (Eriksson et al., in prep.) we discovered that a few models had faulty starting structures. A closer analysis revealed there were in total nine models that needed revision. We recomputed the faulty hydrostatic start models as well as the wind models and below we present a table (Table 1) with the resultant wind properties. Qualitatively, these

new numbers have no major impact on the overall result, although they would slightly affect the appearance of Figs. 6 and 7. The conclusions are not affected.

References

Höfner, S., & Dorfi, E. A. 1997, A&A, 319, 648
 Mattsson, L., Wahlin, R., & Höfner, S. 2010, A&A, 509, A14

Table 1. Input parameters (Δv_p , M_\star , $\log(L_\star)$, L_\star , T_{eff} , $\log(\text{C-O})+12$, P) and the resulting average mass loss rate, average wind speed and the mean degree of dust condensation at the outer boundary.

Δv_p [km s ⁻¹]	M_\star [M_\odot]	$\log(L_\star)$ [L_\odot]	T_{eff} [K]	$\log(\text{C-O})+12$	P [days]	$\langle \dot{M} \rangle$ [$M_\odot \text{ yr}^{-1}$]	$\langle u_{\text{out}} \rangle$ [km s ⁻¹]	$\langle f_c \rangle$	$\langle \rho_d / \rho_g \rangle$
2.0	0.75	3.85	2600	8.80	393	4.96E-06	23.8	0.259	1.40E-03
4.0	0.75	3.85	2600	8.80	393	6.54E-06	23.8	0.289	1.56E-03
6.0	0.75	3.85	2600	8.80	393	8.52E-06	23.6	0.321	1.74E-03
2.0	1.00	4.00	2800	8.20	524	–	–	–	–
4.0	1.00	4.00	2800	8.20	524	6.74E-07	1.87	0.185	2.51E-04
6.0	1.00	4.00	2800	8.20	524	2.36E-06	1.69	0.204	2.77E-04
2.0	1.00	3.85	3000	8.80	393	–	–	–	–
4.0	1.00	3.85	3000	8.80	393	1.43E-06	32.4	0.400	2.16E-03
6.0	1.00	3.85	3000	8.80	393	4.35E-06	20.0	0.293	1.58E-03

Notes. The dust-to-gas mass ratio ρ_d / ρ_g is calculated from f_c as described in Höfner & Dorfi (1997). In the two cases where no numbers are given, no sustained outflows were produced according to the model.