Erratum: A novel black hole mass scaling relation based on coronal gas, and its dependence with the accretion disc

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We report a mistake affecting the display of some of the figures presented in the paper 'A novel black hole mass scaling relation based on coronal gas, and its dependence with the accretion disc' (Prieto et al. 2022). The error affects only the figures. Calculations, modelling and discussion throughout this paper are not affected in any respect and remain the same. The error affects figs 5 and 6, the observational data in these figures have been exchanged by mistake between these figures: fig. 5 should show data points for the coronal line ratio [S VIII]/Paβ_{broad} as indicated in its caption, instead [Si X]/Paβ_{broad} data points are displayed by mistake; fig. 6 should show those of the coronal ratio [Si X]/Paβ_{broad} and instead, [S VIII]/Paβ_{broad} data points are displayed by mistake. Unfortunately, the same error affects the two 'bottom' panels in figs 7 and 9, with the same coronal line ratio data points being exchanged as well between these figures by mistake (upper panels in these figures are correct).
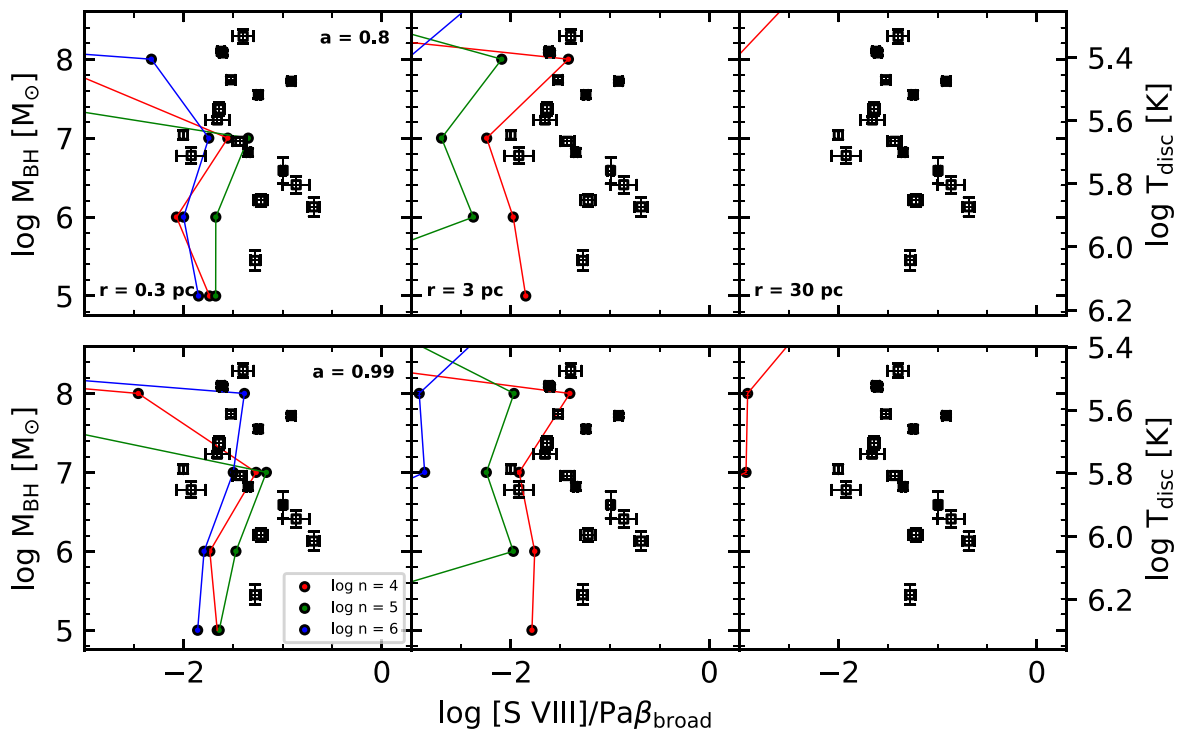

Figure 1. CLOUDY predictions for [S VIII]/Paβ_{broad} versus BH mass using as ionizing continuum equation (2) in original paper (Prieto et al. 2022). Models are run for densities $n_e = 10^3$ cm^{-3} in red, 10^5 cm − 3 (green) and 10^6 cm^{-3} (blue). Each subplot shows the model results for distance r to the ionizing source, $r = 0.3$, 3, and 30 pc, depicted from left to right. Two spins, $a = 0.8$ (upper panel) and $a = 0.99$ (lower panel) are examined. The corresponding T_{disc} per each BH mass – after equation (3) – are depicted on the y-axis, right-side. Data points – black squares – are as in fig. 1 in Prieto et al. (2022).
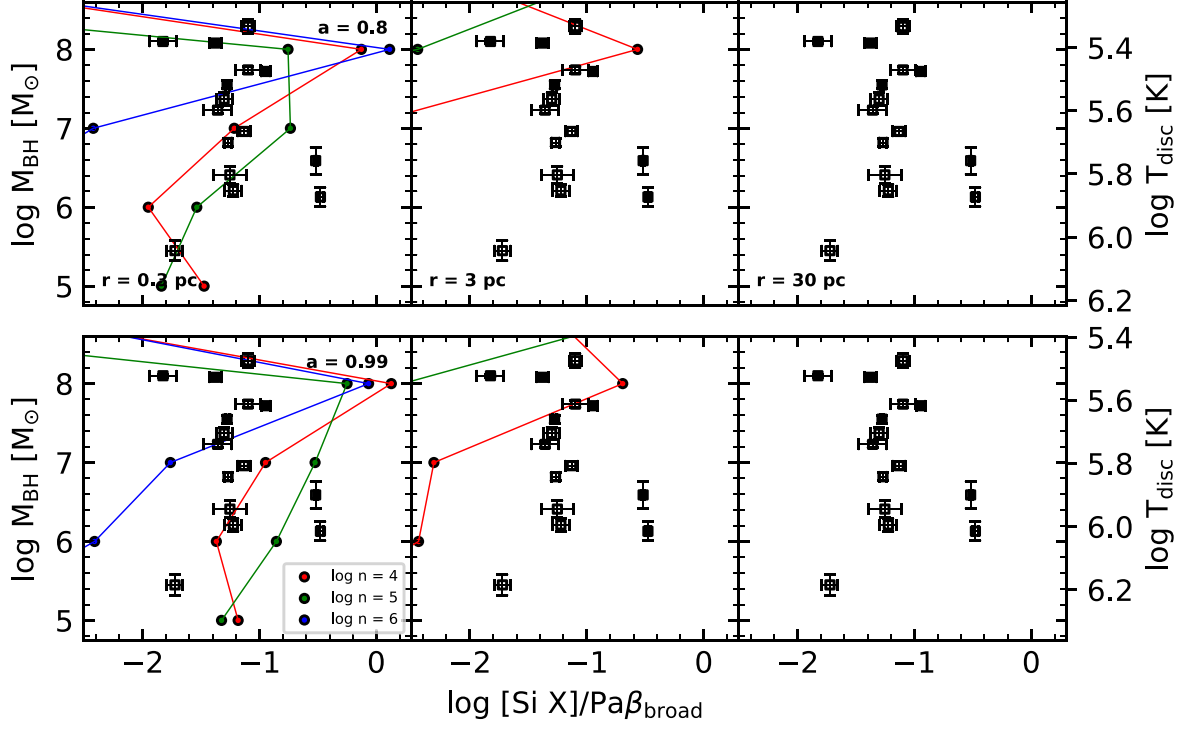
Figure 2. Same as Fig. 1 in this erratum, but for [Si X]/Paβ$_{broad}$.
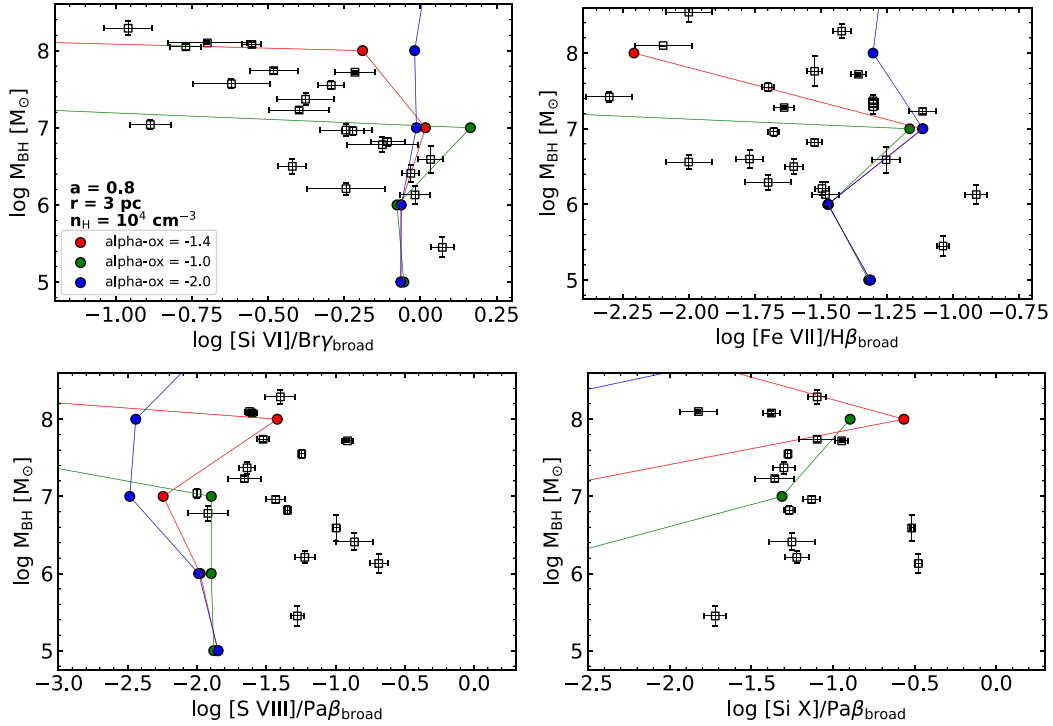

Figure 3. CLOUDY predictions for the four coronal line ratio versus BH mass. The ionizing continuum is that of equation (2) in Prieto et al. (2022) for different values of α_{ox}: red refers to $\alpha_{ox} = -1.4$ – default value used in this work, section 4.2 in Prieto et al. (2022) – green for $\alpha_{ox} = -1$, blue for $\alpha_{ox} = -2$. Models are run for the set of parameters that best account for the [Si VI] – BH mass correlation [fig. 3 in Prieto et al. (2022)]: density $n_e = 10^4$ cm^{-3}, distance $r = 3$ pc, spin a = 0.8. All other model parameters are as in the default case. Data points – black squares – are as those in fig. 1 in Prieto et al. (2022).

New figures with corrected data points in place are presented here. New Figs 1 and 2 replace figs 5 and 6 respectively, in the original paper. New Figs 3 and 4 replace figs 7 and 9 respectively, in the original version. In all cases, original captions to these figures apply as stated. To help the reader, the captions are repeated here.
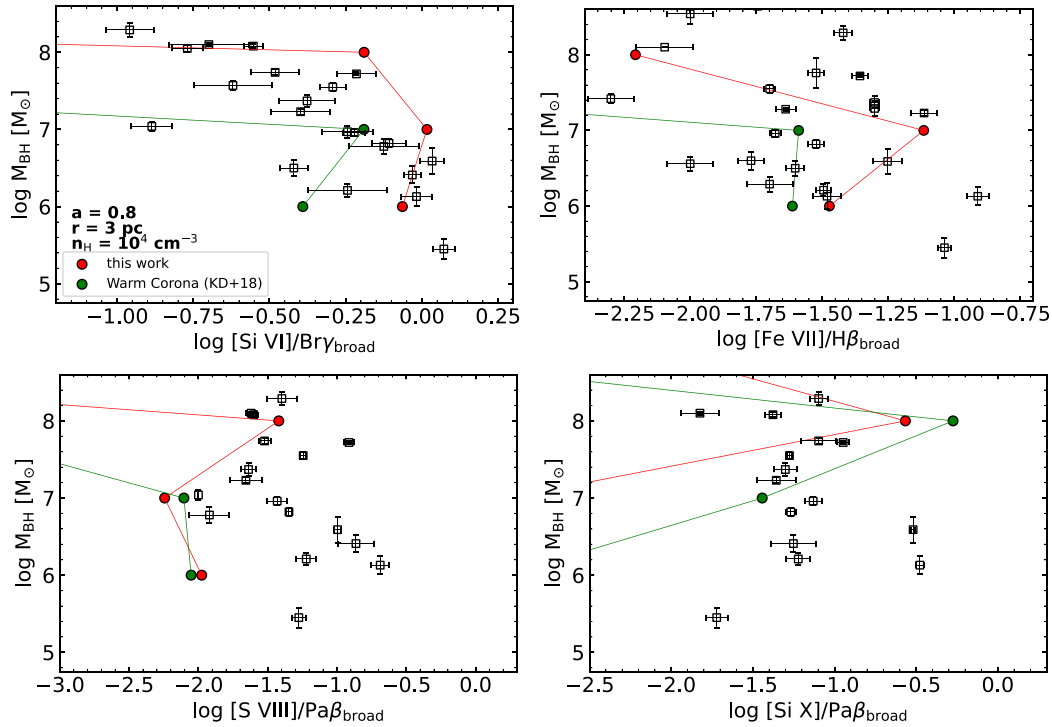
Figure 4. CLOUDY predictions for the four coronal line ratio versus BH mass. In green is shown the prediction for the case of the generic ionizing continuum with the addition of a warm X-ray component [section 4.3.2 in Prieto et al. (2022)]; in red is the result for the default generic case. Model parameters are as in section 4.3.1 in Prieto et al. (2022): $n_e = 10^4 \, \mathrm{cm}^{-3}$, $r = 3$ pc, spin $a = 0.8$, $\alpha_\mathrm{ox} = -1.4$ with rest of parameters as in section 4.1 in Prieto et al. (2022). Data points as in fig. 1 in Prieto et al. (2022).

   In reviewing the paper, a typo has also been identified at the end of subsection 4.3.1: the last sentence should read $\alpha_\mathrm{ox} = -1.4$, and not $\alpha_\mathrm{ox} = -1$.

REFERENCE

Prieto A., Rodríguez-Ardila A., Panda S., Marinello M., 2022, MNRAS, 510, 1010

This paper has been typeset from a TEX/LATEX file prepared by the author.