S34a XRISM Reveals Fe Kα Components and a Highly Ionized Wind in NGC 4388

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We report results from 183 ks XRISM GO1 and simultaneous NuSTAR observations of the Seyfert 2 galaxy NGC 4388, which hosts the brightest Fe Kα line among Compton-thin AGN. The Resolve spectrum reveals the detailed profile of the neutral Fe-K fluorescent line. The profile is best described as the sum of a narrow component (FWHM $\sim$ 480 km s^{-1}; $r \sim 4 \times 10^5\ r_g$) and a broader component (FWHM $\sim$ 4000 km s^{-1}; $r \sim 6 \times 10^3\ r_g$), consistent with the widths of the optical narrow and broad Hα lines. They likely originate in the dusty torus and the broad-line region, respectively. In addition, Fe XXVI Lyα and Fe XXV absorption lines are detected, characterized by $\log \xi \sim 3.49$ erg cm s^{-1}, $\log N_{\rm H} \sim 22.1$ cm^{-2}, $v_{\rm out} \sim 30$ km s^{-1}, and $\sigma_v \sim 160$ km s^{-1}. The location of the highly ionized gas is constrained to $r < 0.1$ pc. At this distance, the escape velocity from the supermassive black hole ($M_{\rm BH} \approx 8.5 \times 10^6\ M_\odot$) is $\sim$ 850 km s^{-1}, far exceeding the observed outflow velocity of only $\sim$ 30 km s^{-1}. This suggests that the absorber could be associated with a gravitationally bound, possibly failed wind. In this talk, we present the results of broadband spectral fitting of the XRISM and NuSTAR data, and discuss the nuclear structure including the wind, the torus, and BLR.