



# Global Distribution of Fe K alpha Lines in the Galactic Center Region Observed with the Suzaku Satellite

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We have surveyed spatial profiles of the Fe K $\alpha$  lines in the Galactic center diffuse X-rays (GCDX), including the transient region from the GCDX to the Galactic ridge X-ray emission (GRXE), with the Suzaku satellite. We resolved Fe K $\alpha$  line complex into three lines of Fe  $\nu$ emissiontype{I}, Fe  $\nu$ emissiontype{XXV} and Fe  $\nu$ emissiontype{XXVI} K $\alpha$ , and obtained their spatial intensity profiles with the resolution of  $\sim 0.1^\circ$ . We compared the Fe  $\nu$ emissiontype{XXV} K $\alpha$  profile with a stellar mass distribution (SMD) model made from near infrared observations. The intensity profile of Fe  $\nu$ emissiontype{XXV} K $\alpha$  is nicely fitted with the SMD model in the GRXE region, while that in the GCDX region shows  $3.8 \pm 0.3$  ( $0.2 < |l| < 1.5$ ) or  $19 \pm 6$  ( $0 < |l| < 0.2$ ) times excess over the best-fit SMD model in the GRXE region. Thus Fe  $\nu$ emissiontype{XXV} K $\alpha$  in the GCDX is hardly explained by the same origin of the GRXE. In the case of point source origin, a new population with the extremely strong Fe  $\nu$ emissiontype{XXV} K $\alpha$  line is required. An alternative possibility is that the majority of the GCDX is truly diffuse optically thin thermal plasma.

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