Temperature-dependent spectral weight transfer in $\text{YBa}_2\text{Cu}_3\text{O}_x$ probed by x-ray absorption spectroscopy\textsuperscript{1} J.-Y. LIN, Institute of Physics, National Chiao Tung University — The x-ray absorption spectroscopy was utilized to critically examine the temperature dependency of the spectral weight in $\text{YBa}_2\text{Cu}_3\text{O}_x$. Large excess spectral weight for the Zhang-Rice singlet due to dynamics of holes is found with its doping dependence showing similar doom-like shape as that for $T_c$. Furthermore, appreciable spectral weight transfer from the upper Hubbard band to Zhang-Rice singlet was observed as the temperature crosses the onset temperature for the pseudogap. The observed spectral weight transfer follows the change of the pseudogap, indicating a strong link between pseudogap and the upper Hubbard band.

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