The intergalactic dust has been found around nearby starburst galaxies by recent observations. Such intergalactic dust may affect the supernova cosmology and the metal enrichment in the intergalactic medium. Here, we show that the intergalactic dust may also affect the thermal history of the intergalactic medium; The photoelectric heating by the intergalactic dust exceeds the hydrogen photoionization heating in the intergalactic medium even if the dust-to-gas mass ratio is 1% of that in the Milky Way (Figure 1).

Keywords: intergalactic dust; photoelectric effect; grain charge.

Figure 1. Heating rates in the intergalactic medium.

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