

# Intergalactic Dust and Its Photoelectric Heating

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The intergalactic dust has been found around nearby starburst galaxies by recent observations<sup>1</sup>. Such intergalactic dust may affect the supernova cosmology<sup>2</sup> and the metal enrichment in the intergalactic medium<sup>3</sup>. Here, we show that the intergalactic dust may also affect the thermal history of the intergalactic medium<sup>4,5</sup>; 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.

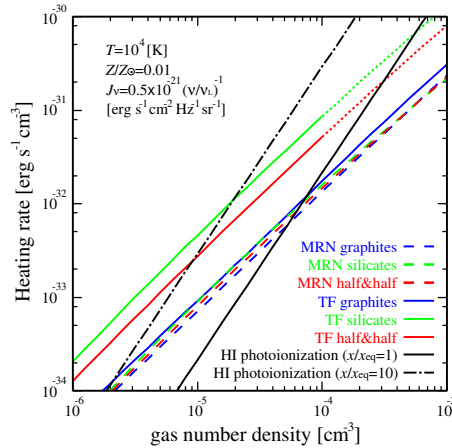


Figure 1. Heating rates in the intergalactic medium.

## References

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