

# THE EFFECT OF DUST SPUTTERING IN SUPERNOVA REMNANT

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IRAS observations of supernova remnants (SNRs) reported that infrared luminosity from SNRs are very different, though some of them have same temperature. This is because infrared emission depends on density of the dust grains.

We calculated infrared and X-ray emission from SNR just after supernova explosion, in case dust number density  $n_i = 10^2, 10^5$ , released energy  $E = 10^{51} \text{ erg}$ . We used one dimensional Flux-Split method, uniform molecular cloud, and spherically symmetric physical parameters. To make our model more realistic, we include the effect of dust grain sputtering which is expected to decrease infrared emission.

This effect is expressed by decreasing the radii of the dust grains depending on surrounding hot gas density.

We found that it is in dense molecular cloud that infrared emission become greater than X-ray emission, in case dust sputtering model. The effect of dust grain cooling quicken the shift to cooling phase, and make more compact SNR.

## References

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