

# **Search for Landau resonance in supernova remnant**

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The energy exchange between thermal particles and non thermal particles ( Landau resonance ) have been observed in the Sun. We search for a Landau resonance in supernova remnant (SNR). By Fermi acceleration, particles are accelerated in the SNR and are escaped from the SNR. There may be a decrease of non thermal particles with an age in the SNR. We may see a decrease of thermal particles with an age in the SNR through a Landau resonance. High atomic number  $Z$  is rapidly accelerated. We obtain a decrease time scale of thermal particles for six metals and search for  $Z$  dependence on a decrease time scale.