NON-EQUILIBRIUM IONIZATION PLASMA DURING LARGE LIMB FLARE OBSERVED BY HINODE

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I have studied plasma heating considering the time-dependent ionization process during a large solar flare on 2017 September 10 observed by Hinode/EIS. The observed ratios between Fe XXIV and Fe XXIII increase along the downstream of the reconnection outflow, and they are consistent with the results of considering the time-dependent ionization effect at a constant electron temperature Te = 25MK. It is also studied that the non-thermal velocity considering the time-dependent ionization process during a large solar flare. The non-thermal velocity, which can be related to the turbulent velocity, increases significantly with the height of the sheet structure associated with magnetic reconnection, even when considering the time-dependent ionization process.

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