Analysis of Enhanced Velocity Signals Observed during Solar Flares

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Solar flares are known to release a large amount of energy. It is believed that the flares can excite velocity oscillations in active regions.We report here the changes in velocity signals in three active regions which have produced large X-class flares. The enhanced velocity signals appeared during the rise time of the GOES soft X-ray flux. These signals are located close to the vicinity of the hard X-ray source regions as observed with RHESSI. The power maps of the active region show enhancement in the frequency regime 5–6.5 mHz, while there is feeble or no enhancement of these signals in 2–4 mHz frequency band. High energy particles with sufficient momentum seem to be the cause for these observed enhanced velocity signals.

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