relative intensity variation \((I - I_{ch})/I_{ch}\) with time in flare kernels and background chromosphere was then determined. These time sequences were subjected to Fourier Transform (FT) to obtain the oscillation modes. Our analysis showed predominant 5 and 3 minute modes unambiguously in chromosphere and flares.

Our results mark the first detection of the prominent 5 and 3 minute modes in flares. The frequency deviation in oscillation modes in chromosphere and flares observed by us from those determined at the center of the disk by Elliott (1969); Kneer & Uexkull (1983) and Harvey et al. (1993), may be an effect of higher magnetic field and location of the measurements in chromosphere. Further, the reduction in frequencies of the order of 100\(\mu\)Hz observed in flare oscillations as compared to the background chromosphere may be due to the high temperature in flare regions as predicted by Evans & Roberts 1990).

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2-Dimensional Velocity Field Measurement of Eruptive Prominence Observed on January 14, 1993

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On January 14, 1993, a quiescent prominence was observed from the Udaipur Solar Observatory on the south-east limb of the sun which suddenly erupted between 05:11 and 07:13 UT, displaying a huge mass ejection. Two dimensional velocity measurement of several knots of the eruptive prominence were made. Except for one fast moving knot, the whole prominence material rose with an initial average velocity of 90 km/s and with increasing height the velocity increased to 720 km/s. Within 49 minutes the prominence material reached upto a height of \(5.5 \times 10^5\) km from the limb. A conspicuous increase in the acceleration by two orders of magnitude suggests an imbalance between the magnetic, gravitational and kinetic energy. A remarkable new phenomenon of quasi-periodic velocity oscillations with height in prominence knots has been observed.

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Three-Dimensional Velocity Structure of Surge and Quiescent Prominences


We report here measurements of three-dimensional velocity field structure of a surge prominence observed on May 26, 1993 and a quiescent prominence observed on June 7,