

## Periodic density redistribution of parametrically excited spin waves in an antiferromagnet

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**Abstract.** A nonuniform distribution of the density of parametrically excited magnons is observed experimentally in an antiferromagnetic  $\text{CsMnF}_3$  sample. The nonuniform distribution occurs at a high pumping power when oscillations of the high frequency susceptibility occur. These oscillations were observed earlier and their nature was not clear. It is found that during the increase of the absorbed power on the occurrence of the oscillation, the spin wave condenses near the middle of the sample. The condensation occurs as a result of a nonlinear shift of the magnon spectrum and is similar to self-focusing of light in nonlinear media. The electromagnetic radiation of parametrically excited spin waves is studied. It is found that the periodic redistribution of the density exerts an additional restrictive effect on the amplitude of the parametrically excited magnons.

**Keywords.** Antiferromagnet; periodic density distribution.

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