

## Experimental Evidence of Relativistic Doppler Frequency Conversion on a Relativistic Electron Beam Front

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Frequency conversion of microwaves from X to Ka band is observed upon their reflection from the front of an intense relativistic electron beam in two different machines. The incident X-band microwaves derive from emission of the beam itself. The results are in qualitative agreement with the expected beam front velocity monitored from variable gas pressure, and a pulse compression, associated with beam front reflection, is observed.

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