Abstracts

Generation of Highly Tunable Microwave Radiation via a Relativistic Ionization Front

R.L. Savage, Jr., C. Joshi and W.B. Mori. "Generation of Highly Tunable Microwave Radiation via a Relativistic Ionization Front." 1991 MTT-S International Microwave Symposium Digest 91.3 (1991 Vol. III [MWSYM]): 1315-1318.

This paper reports the experimental demonstration of frequency upshifting of microwave radiation by a relativistic ionization front. Source radiation at 34.8 GHz has been upshifted to greater than 116 GHz in a continuously tunable fashion. It is a new technique for generating high-power, tunable radiation in short pulses, and has potential applications in plasma diagnostics, time-resolved microwave spectroscopy and ultra-wideband impulse radar.

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