Axial extraction of high-power microwaves from relativistic traveling wave amplifiers

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We report theoretical and experimental results from research into coaxial extraction of high-power microwaves from *X*-band traveling wave tube amplifiers. Power levels exceeding 60 MW have been measured at 9.1 GHz. The output level is relatively constant for the full 70 ns duration of the 700 kV, 500 A electron beam pulse. Results indicate that this coaxial geometry is broadband when compared to traditional, highly tuned radial extraction and may thus have applications in a range of high-power microwave devices. © *1996 American Institute of Physics.* [S0003-6951(96)04637-2]