On the Coupling Between a Quasiperiodic Structure and an Asymmetric Output Arm

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Abstract—**We present the analysis of the electromagnetic coupling between a quasi-periodic disk loaded structure and an asymmetric radial arm. The field is excited by a current distribution which models the spatial growth of a space-charge wave in a traveling wave structure. The output power is controlled by a stub tuner. Maximum power does not occur for minimum reflection. The condition for this regime is presented.**

In order to isolate the input from the output the TWT was split in two sections separated by a sever (lossy material whose radius is below cut-off). The second set of experiments on two stage high power TWT indicated that power levels in excess of 400 MW are achievable with no indication of RF breakdown [3]. In this case however the output spectrum was 300 MHz wide and a significant amount of power (up to 50%)