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Calorimetric Power Measurements of the DIII-D Gyrotron System¹ I. GORELOV, J. LOHR, R.W. CALLIS, W.P. CARY, D. PONCE, R.I. PINSKER, H. CHIU, General Atomics, F.W. BAITY, ORNL — Gyrotron power measurements are an integral part of rf experiments on DIII-D. The ECH complex at General Atomics is built up from four 110 GHz, 1 MW gyrotrons, one from Communication and Power Industry (CPI) and three from Russia's Gyrotron Company (Gycom). Power measurements are made calorimetrically using the temperature and flow measurements of the gyrotron cooling circuits. Three such circuits are measured on the Gycom gyrotrons: window, MOU and dummy load. Interior cooling circuits are additionally measured on the CPI gyrotron that are very useful when tuning for maximum power and efficiency. Calorimetric signals from each cooling circuit are acquired by computer, where the dissipated energy is calculated with a *LabView* program. From these calculations, total rf power and efficiency were determined. Thus, calorimetry measurements were effectuated during gyrotron operations to provide the average power of each pulse.

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Prefer Oral Session
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