SET 3 DATA – Normal RE Trip Threshold
Fractional Missing Energy = 0.63

Reflected Pulse

Forward Pulse
Fractional Missing Energy = 0.45

Reflected Pulse

Forward Pulse
Fractional Missing Energy = 0.35

Reflected Pulse

Forward Pulse
Fractional Missing Energy = 0.38

Reflected Pulse

Forward Pulse
Fractional Missing Energy = 0.37

Reflected Pulse

Forward Pulse
Fractional Missing Energy = 0.27

Reflected Pulse

Forward Pulse
Fractional Missing Energy = 0.27

Reflected Pulse

Forward Pulse

Time (ns)

Power (MW)

Time (ns)
Fractional Missing Energy = 0.10

Reflected Pulse

Power (MW)

Time (ns)

Output Pulse

Power (MW)

Time (ns)
.33 = 14 J which would melt (1.6 mm)$^3$ of Cu so RF energy mainly heats plasma
DDS1 Breakdown Statistics

Breakdown Location (ns) along Structure (100 ns Fill Time)

Breakdown Location (ns) along Pulse (250 ns Width)
SET 12 DATA – Minimum RE Trip Threshold
Fractional Missing Energy = 0.06

Reflected Pulse

Output Pulse

Power (MW)

Time (ns)

Power (MW)

Time (ns)
Fractional Missing Energy = 0.38

Reflected Pulse

Output Pulse

Time (ns)
Fractional Missing Energy = 0.08

Reflected Pulse

Output Pulse
Reflected and Transmitted RF Pulse From DDS1 for a Breakdown Event (Solid Blue) and a Non-Breakdown Event (Dotted Green)

Fractional Missing Energy = 0.27

Reflected Pulse

Transmitted Pulse
Fractional Missing Energy = 0.06

Reflected Pulse

Output Pulse
Fractional Missing Energy = 0.56

Reflected Pulse

Output Pulse

Time (ns)

Power (MW)
Fractional Missing Energy = -0.12
Fractional Missing Energy = 0.04

Reflected Pulse

Output Pulse
Fractional Missing Energy = 0.13

Reflected Pulse

Output Pulse
DDS1 Breakdown Statistics

Breakdown Location (ns) along Pulse (250 ns Width)

Breakdown Location (ns) along Structure (100 ns Fill Time)
DDS1 Breakdown Statistics

The figure shows two histograms. The top histogram represents the distribution of events as a function of the peak reflected power relative to the peak input power. The bottom histogram shows the distribution of events as a function of the fractional missing energy.
DDS1 Breakdown Statistics

![Graph showing DDS1 Breakdown Statistics]

- Y-axis: Fractional Missing Energy
- X-axis: Peak Reflected Power / Peak Input Power

The graph illustrates the statistical distribution of DDS1 breakdowns, with data points scattered across the plane, indicating the relationship between fractional missing energy and the ratio of peak reflected power to peak input power.