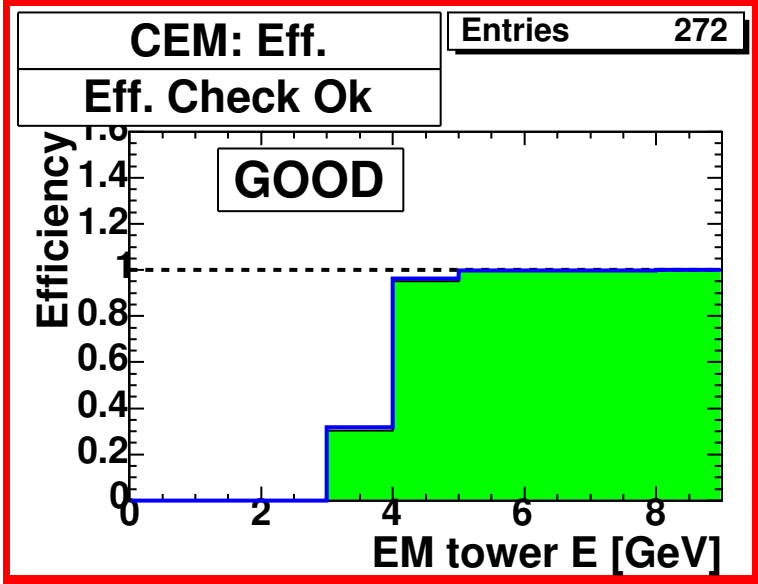
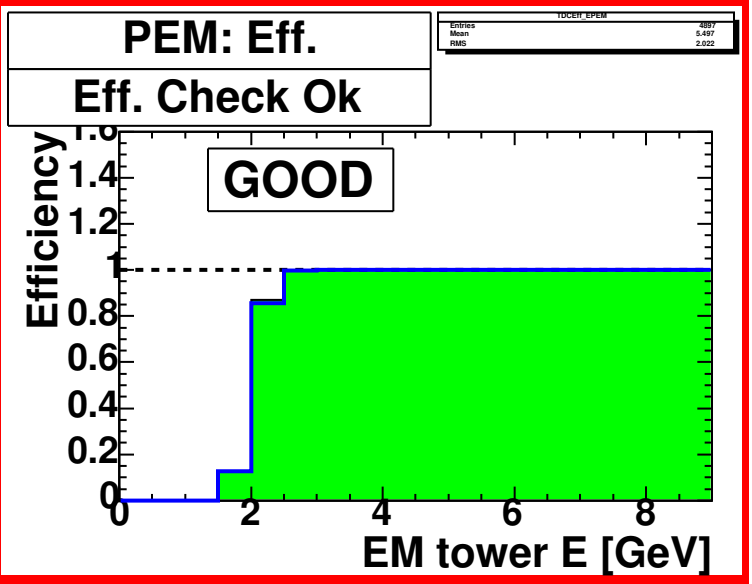
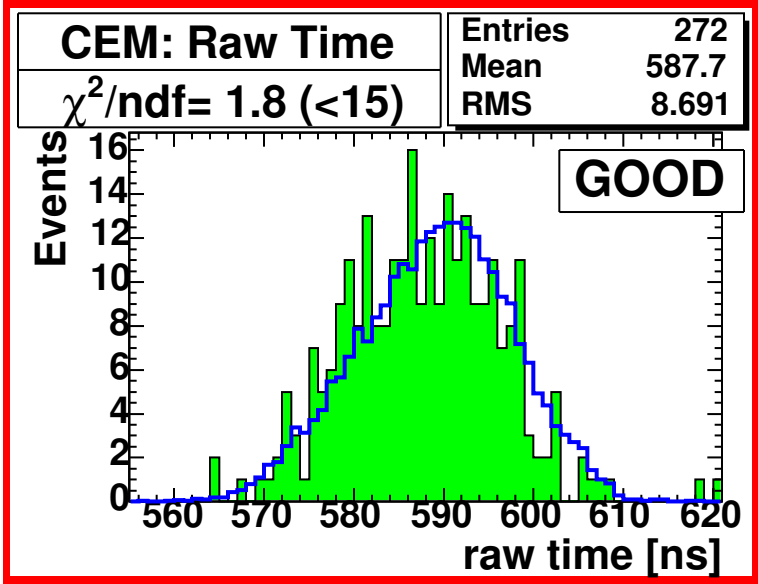
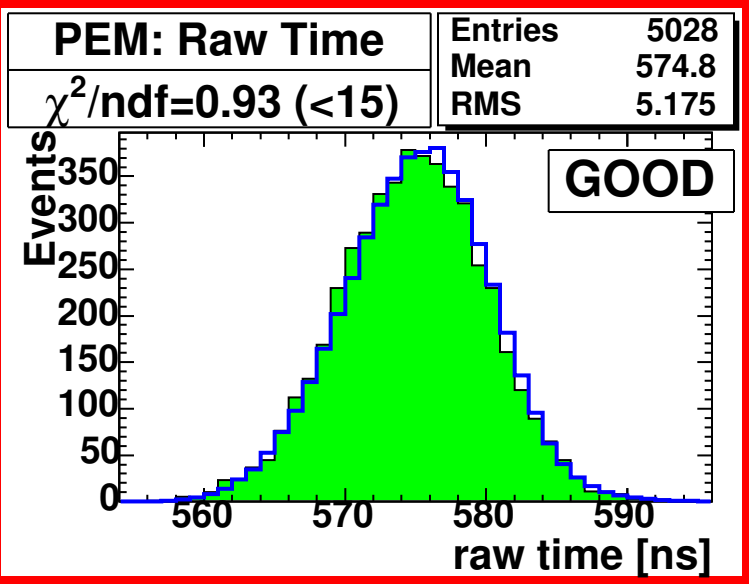
ObjectMon #4 TimeMonitor EMTDC Timing

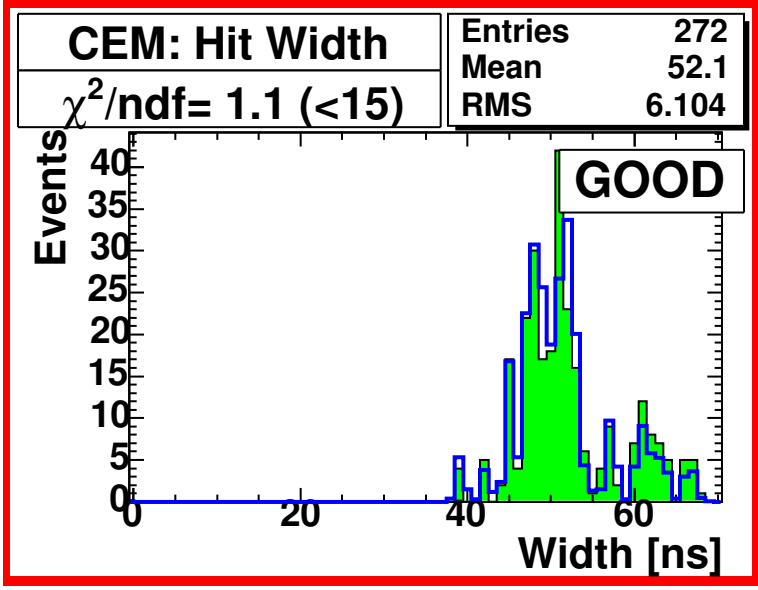
COSMICS DATA SHOULD NOT BE RUN WITH PHYSICS TCL!!!

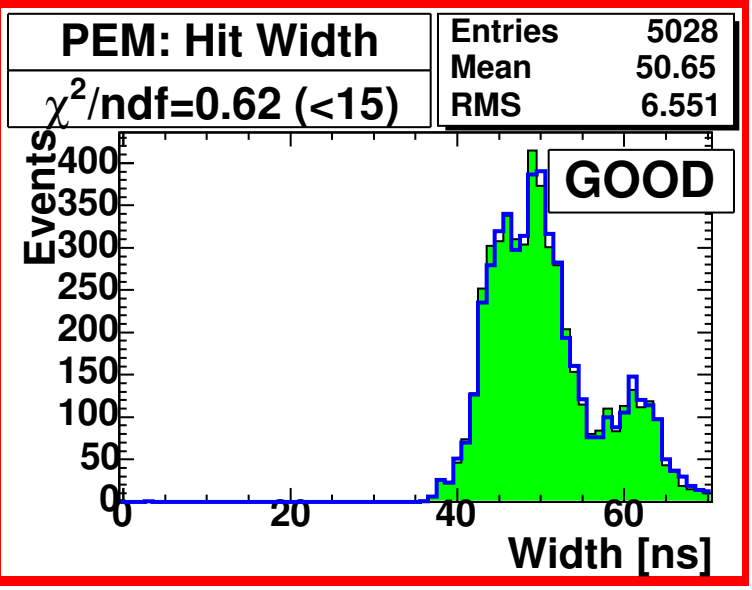












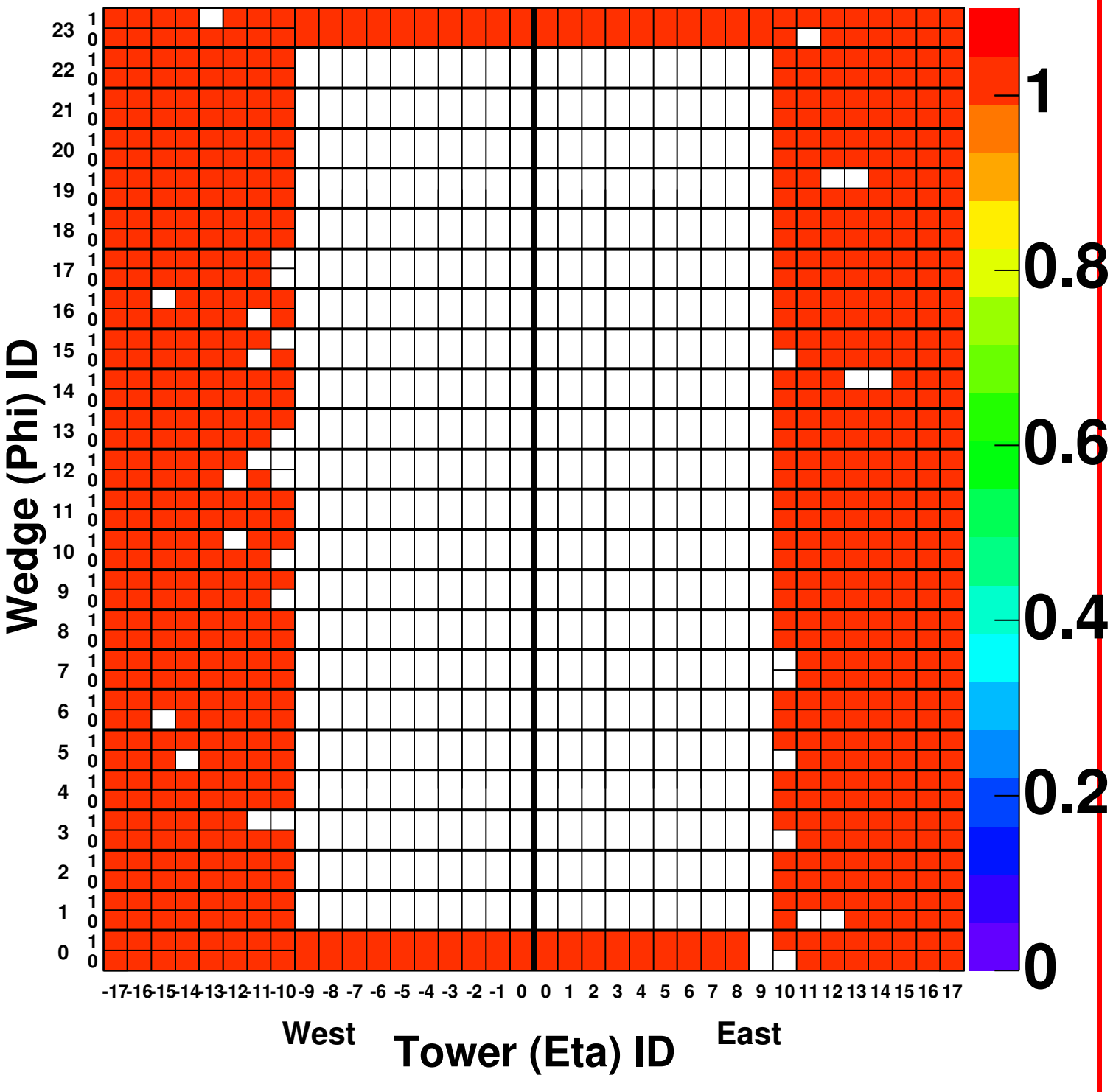
ObjectMon #9 TimeMonitor EMTD: 100% Eff 2D

COSMICS DATA SHOULD NOT BE RUN WITH PHYSICS TCL!!!

Eff. of EM Phototubes in 100% range

not red are BAD

100% Energy range [GeV]:
CEM: PMTE ≥ 6.0
PEM: PMTE ≥ 3.0



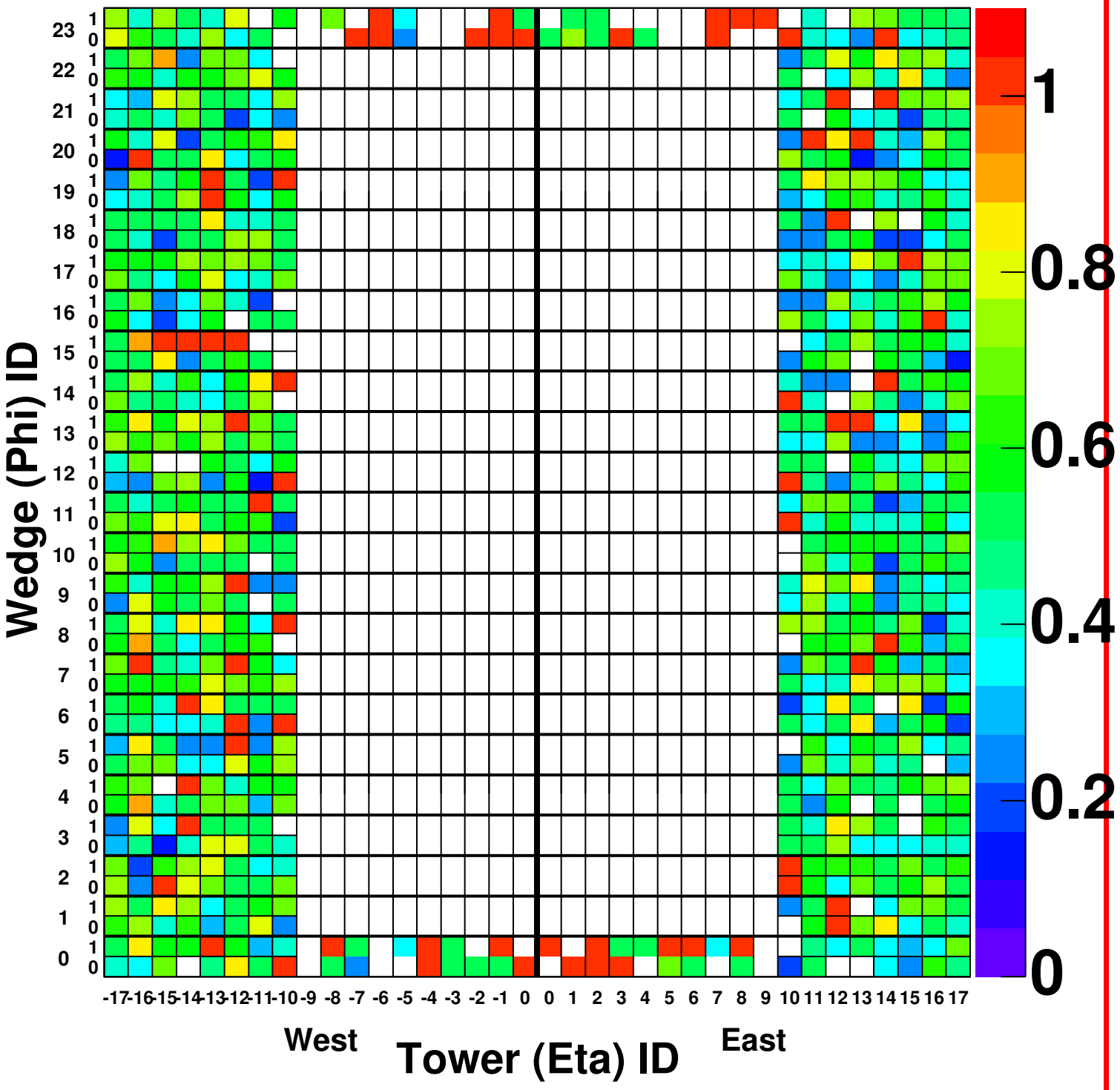
ObjectMon #8 TimeMonitor EMTD: 50% Eff 2D

COSMICS DATA SHOULD NOT BE RUN WITH PHYSICS TCL!!!

Eff. of EM Phototube in 50% range

blue - BAD green - GOOD

50% Energy range [GeV]:
CEM: 3.3 ≤ PMTE < 4.7
PEM: 1.2 ≤ PMTE < 2.6



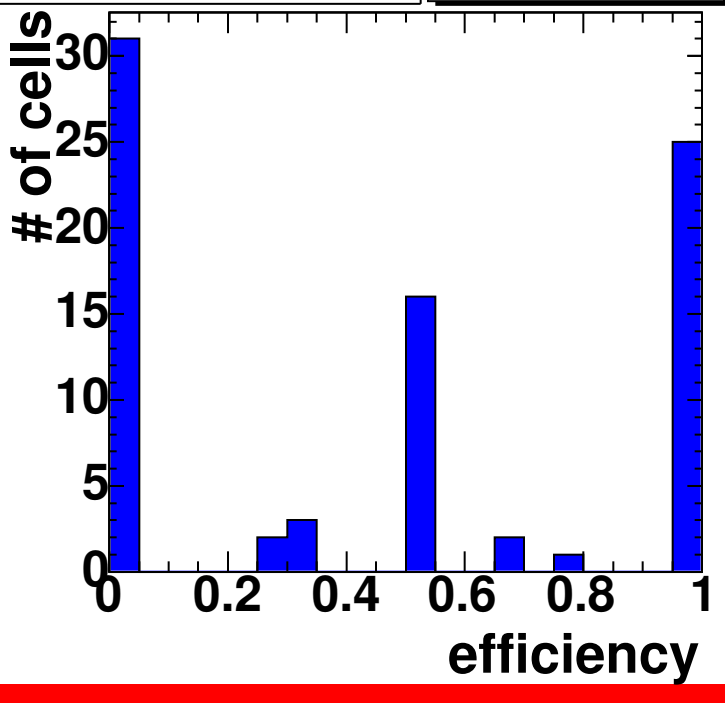
ObjectMon #10 TimeMonitor EMTD: 50% and 100% Eff

COSMICS DATA SHOULD NOT BE RUN WITH PHYSICS TCL!!!

CEM: Cell Eff. Distrib. (50%)

Not Checked

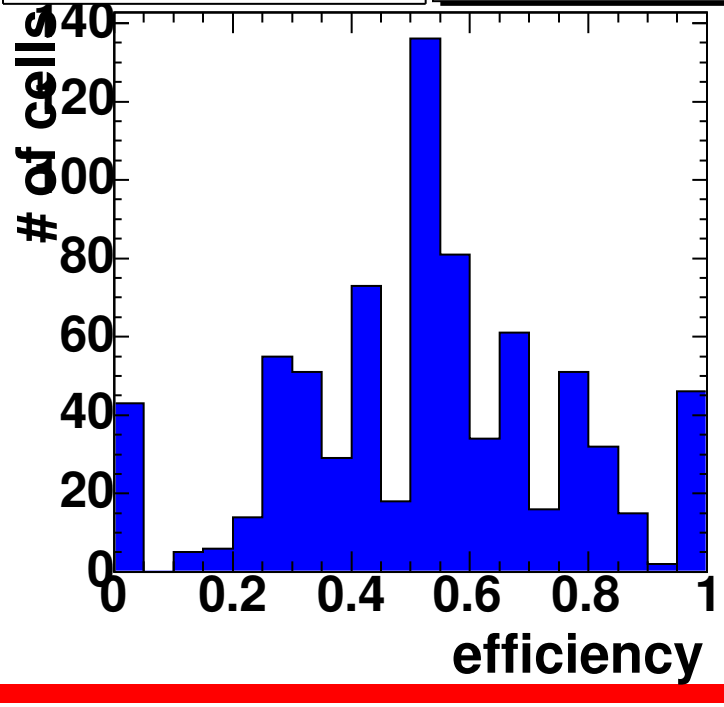
Entries	80
Mean	0.457
RMS	0.4206



PEM: Cell Eff. Distrib. (50%)

Not Checked

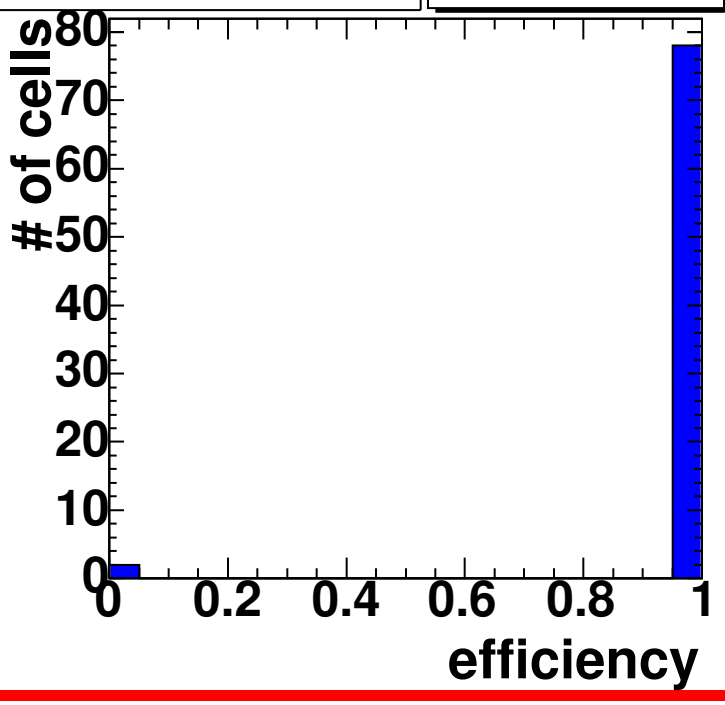
Entries	768
Mean	0.5211
RMS	0.2359



CEM: Cell Eff. Distrib. (100%)

Not Checked

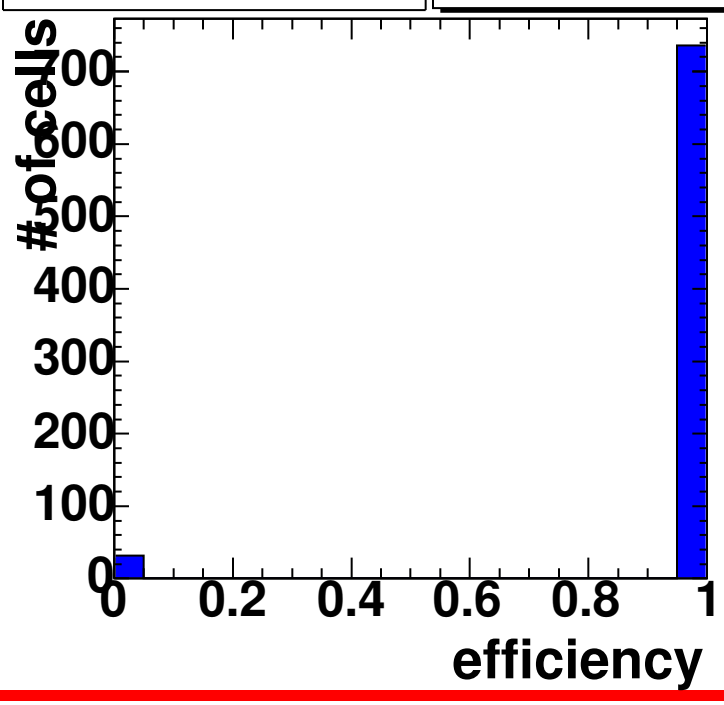
Entries	80
Mean	0.974
RMS	0.156



PEM: Cell Eff. Distrib. (100%)

Not Checked

Entries	768
Mean	0.9574
RMS	0.1996

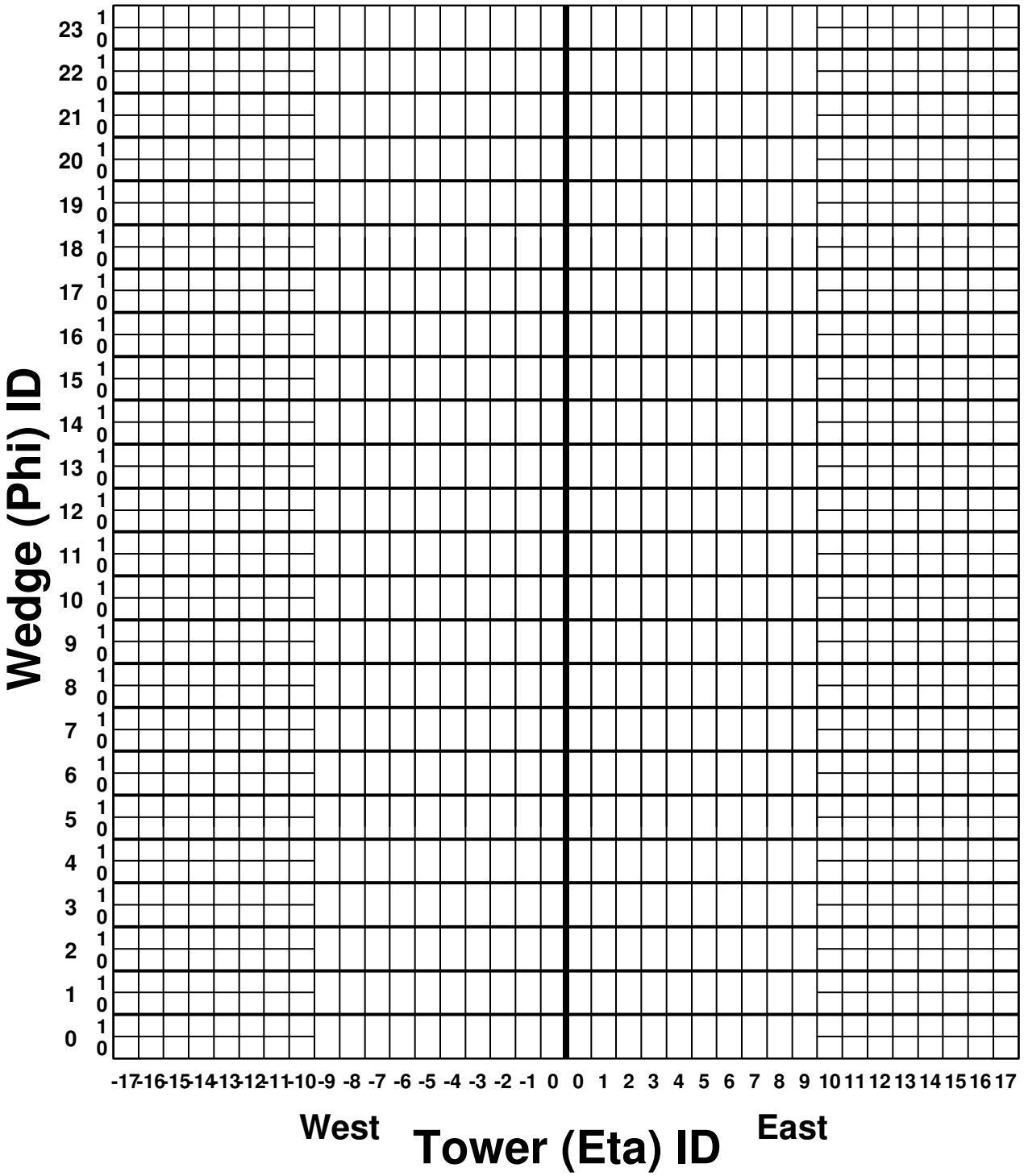


ObjectMon #11 TimeMonitor EMTD: Fake Firings

COSMICS DATA SHOULD NOT BE RUN WITH PHYSICS TCL!!!

EMTDC Fake Firings Occupancy
problematic towers are colored

Energy range [GeV]:
Eeven+Eodd < 0.15
ASD Time Window is
520.0 ns < t_0 < 652.0 ns



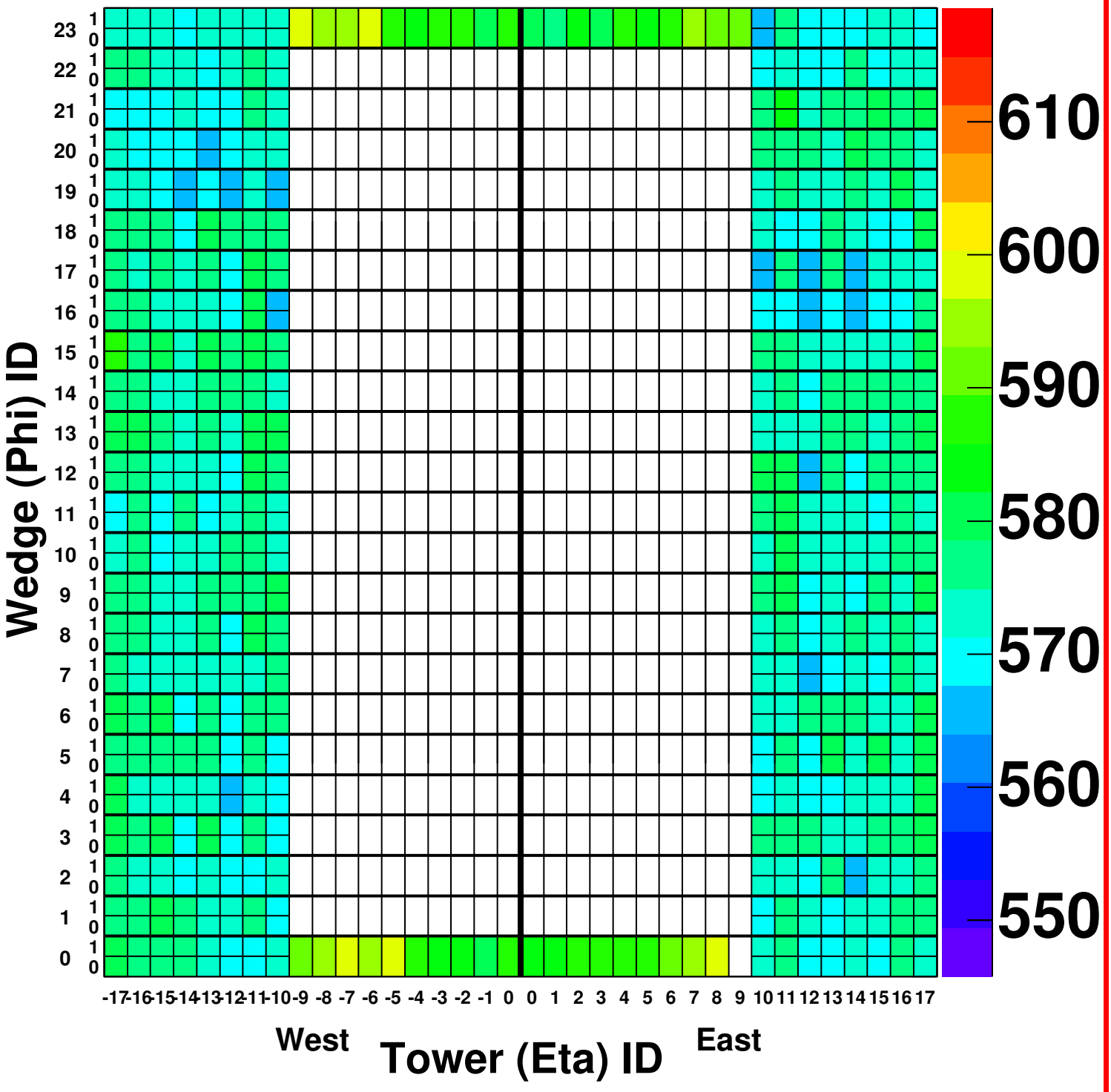
ObjectMon #12 TimeMonitor EMTD: Mean Raw t0

COSMICS DATA SHOULD NOT BE RUN WITH PHYSICS TCL!!!

EMTDC: Mean Raw t_0

purple or red - problems

ASD Time Window is
520.0 ns < t_0 < 652.0 ns
Eeven+Eodd > 0.15 GeV
$|t_{0corr}-\langle t_{0corr}\rangle|<15.0$ ns



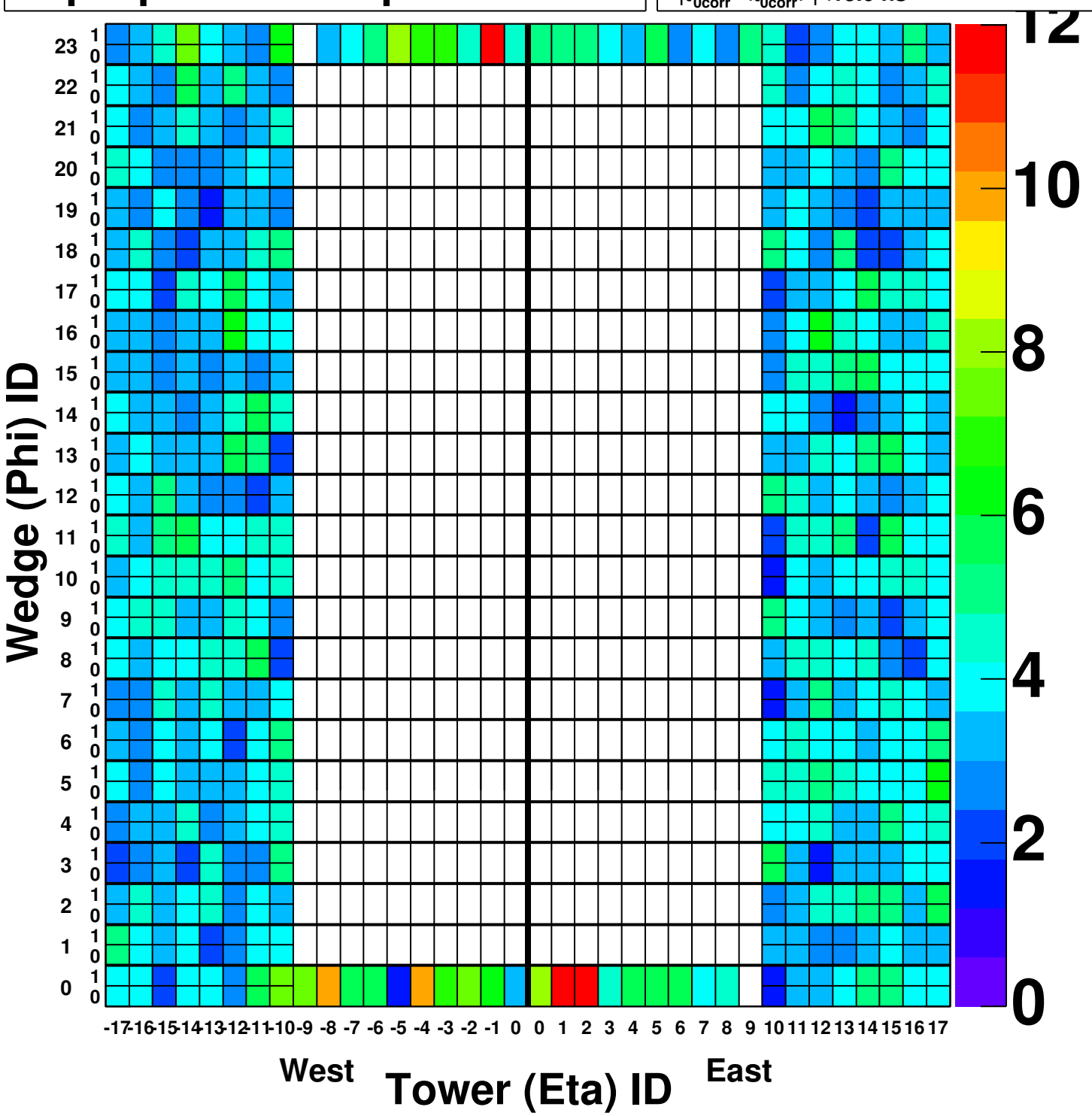
ObjectMon #13 TimeMonitor EMTD: RMS for Raw t0

COSMICS DATA SHOULD NOT BE RUN WITH PHYSICS TCL!!!

EMTDC: Raw t_0 RMS

purple or red - problems

ASD Time Window is
520.0 ns < t_0 < 652.0 ns
Eeven+Eodd > 0.15 GeV
$|t_{0corr}-\langle t_{0corr}\rangle|<15.0$ ns



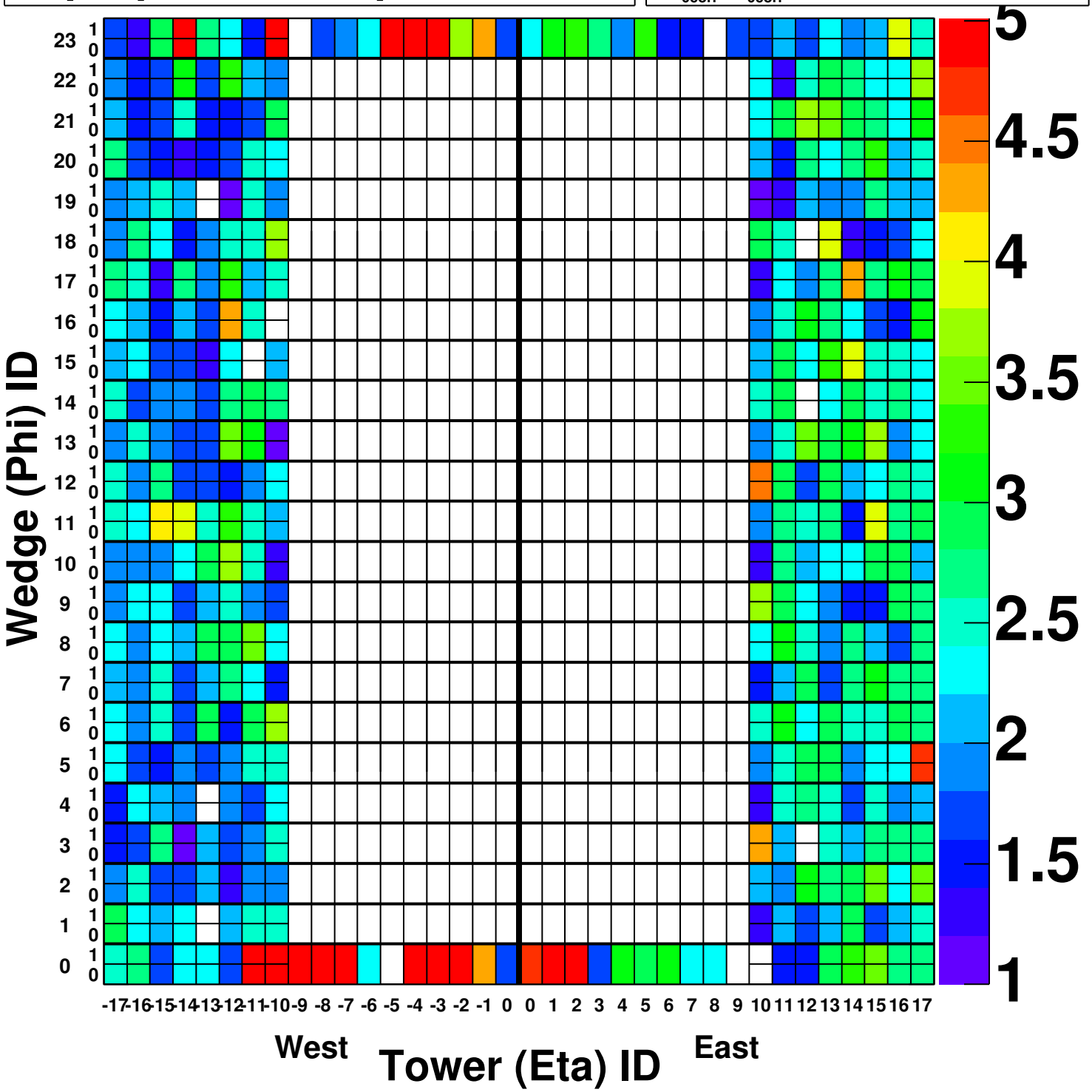
ObjectMon #14 TimeMonitor EMTD: RMS for Corrected t0

COSMICS DATA SHOULD NOT BE RUN WITH PHYSICS TCL!!!

EMTDC: Corrected t_0 RMS

purple or red - problems

ASD Time Window is
520.0 ns < t_0 < 652.0 ns
Eeven+Eodd > 0.15 GeV
$|t_{0corr}-\langle t_{0corr}\rangle|<15.0$ ns



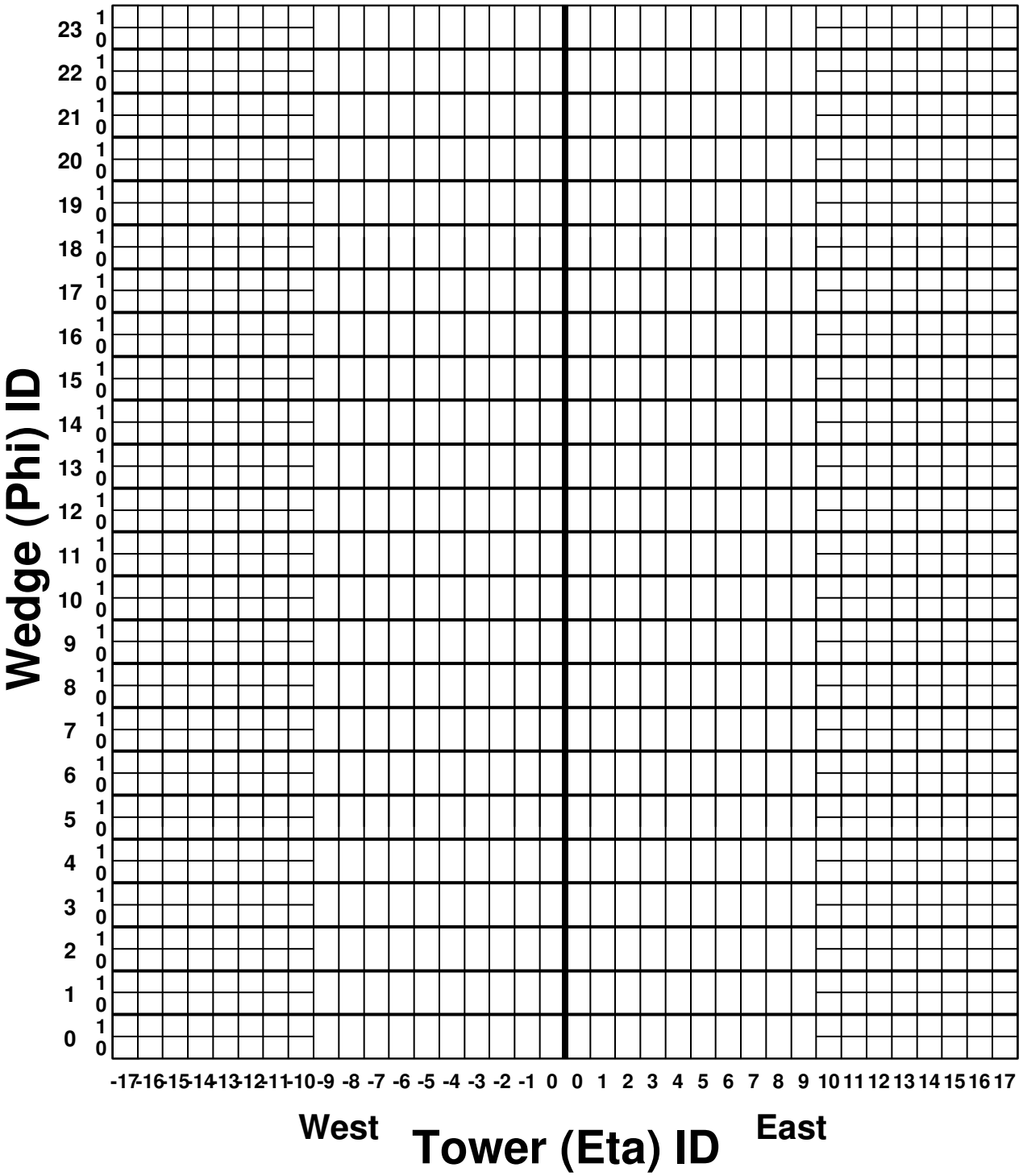
ObjectMon #16 TimeMonitor EMTD: Multiple Firings + Ok Width

COSMICS DATA SHOULD NOT BE RUN WITH PHYSICS TCL!!!

EMTDC: Multiply Ok Width Firing Towers

problematic towers are colored

ASD Time Window is
520.0 ns < t_0 < 652.0 ns
20 < Hit width < 1000 ns
Tower Energy > 0 GeV



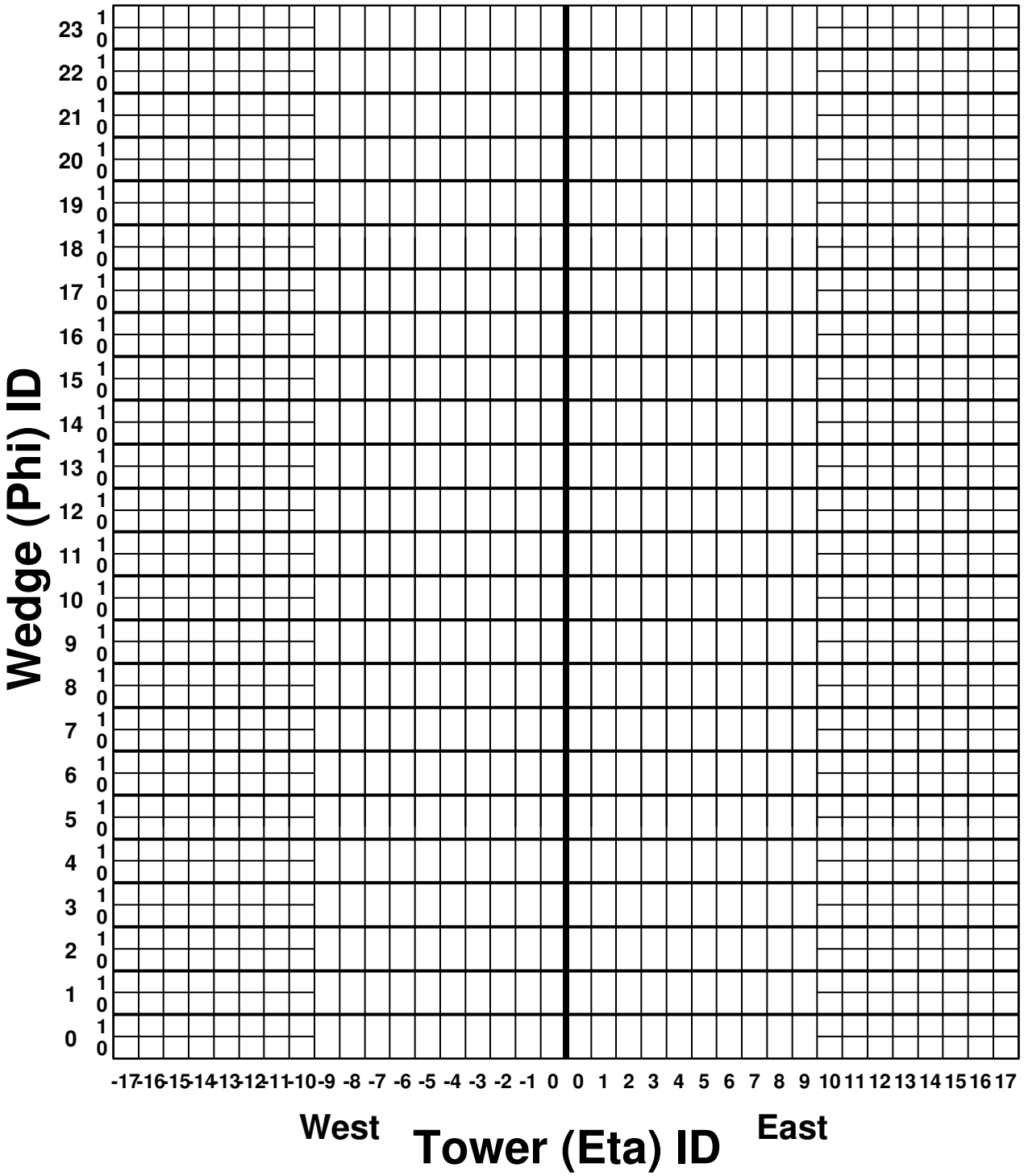
ObjectMon #15 TimeMonitor EMTD: Multiple Firings + Low Width

COSMICS DATA SHOULD NOT BE RUN WITH PHYSICS TCL!!!

EMTDC: Multiply Low Width Firing Towers

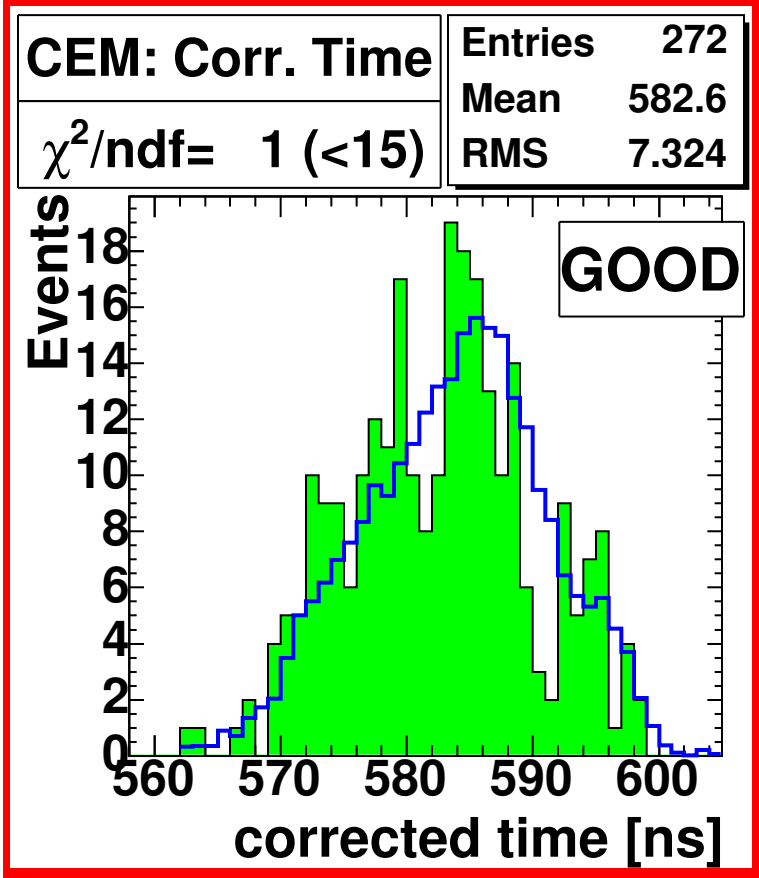
problematic towers are colored

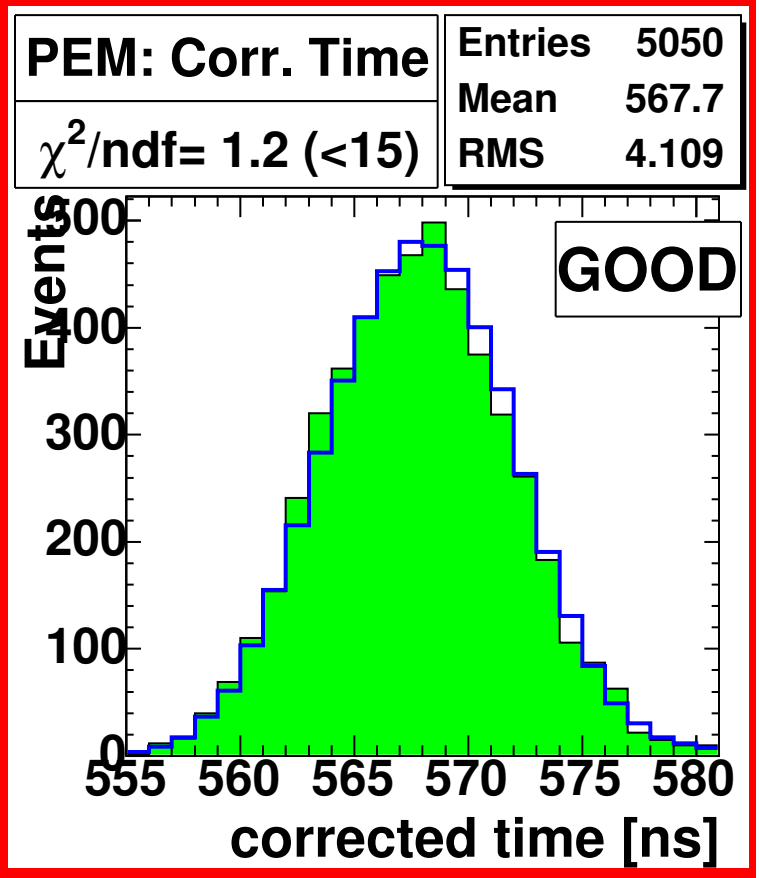
ASD Time Window is
520.0 ns < t_0 < 652.0 ns
4 < Hit width < 20 ns
Tower Energy > 0 GeV

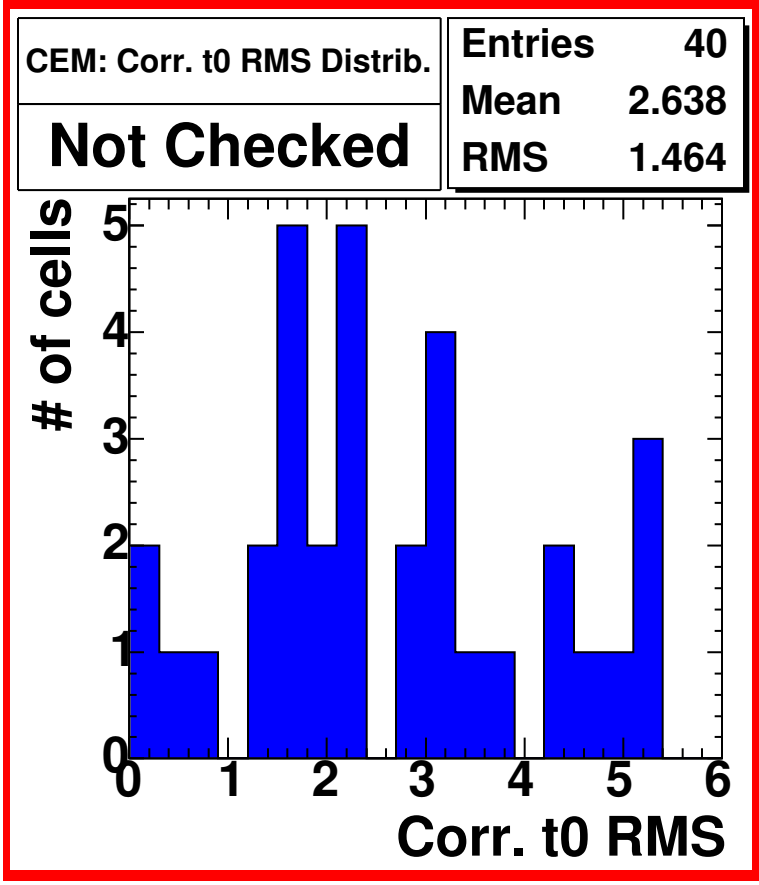


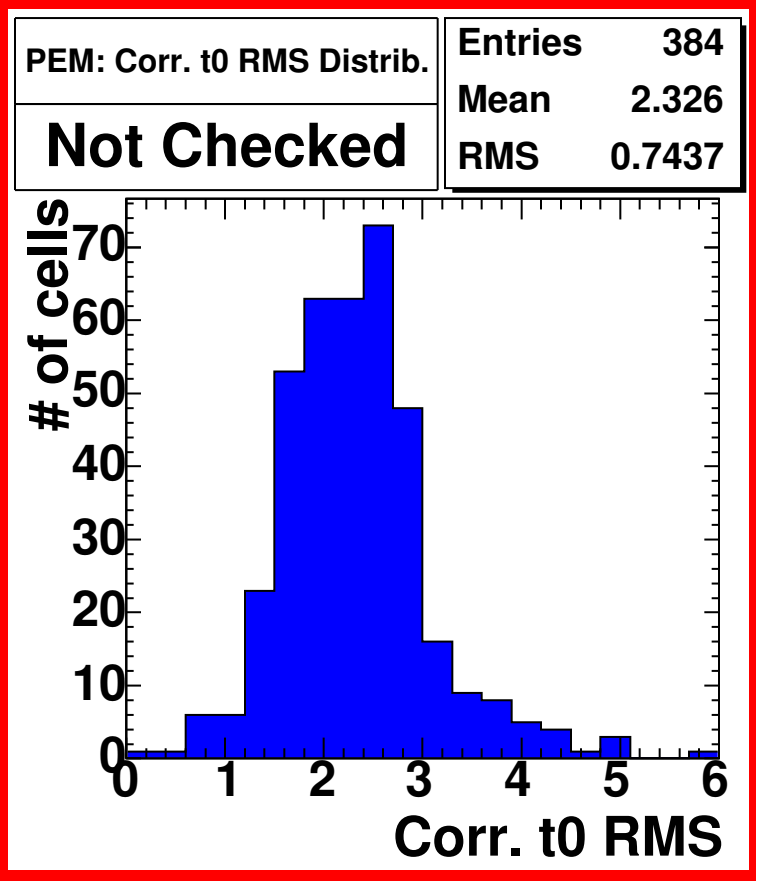
ObjectMon #17 TimeMonitor EMTD: Corrected t0 and RMS

COSMICS DATA SHOULD NOT BE RUN WITH PHYSICS TCL!!!





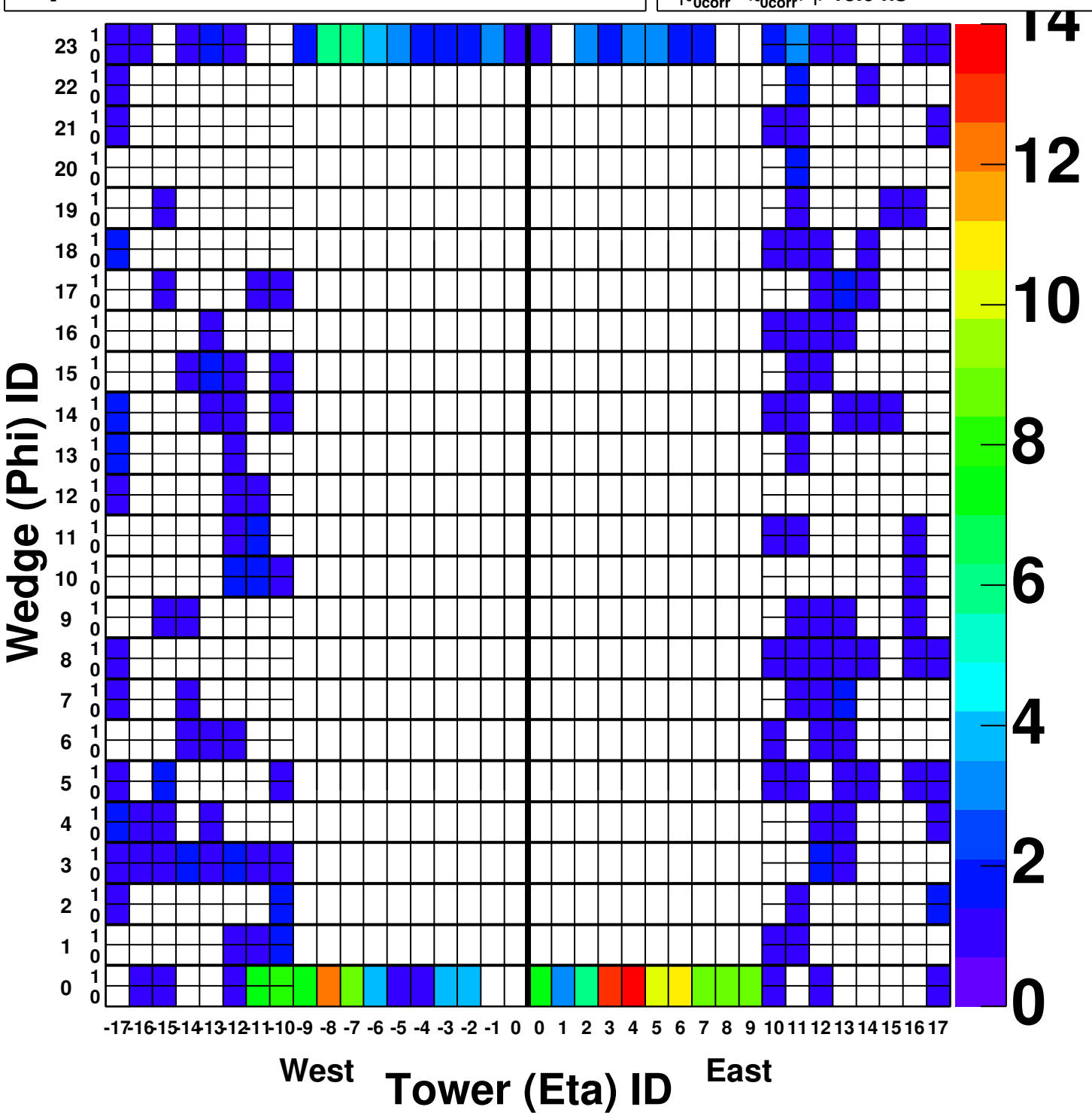




ObjectMon #18 TimeMonitor EMTD: Corr. t0 Far From Mean

COSMICS DATA SHOULD NOT BE RUN WITH PHYSICS TCL!!!

EMTDC: Events Far From Corr. <t0>

problematic towers are colored

ASD Time Window is
520.0 ns < t_0 < 652.0 ns
Eeven+Eodd > 0.1 GeV
$|t_{0corr}-\langle t_{0corr}\rangle|>15.0$ ns