

L1 Busy Relationship to L2 Processing/Monitoring

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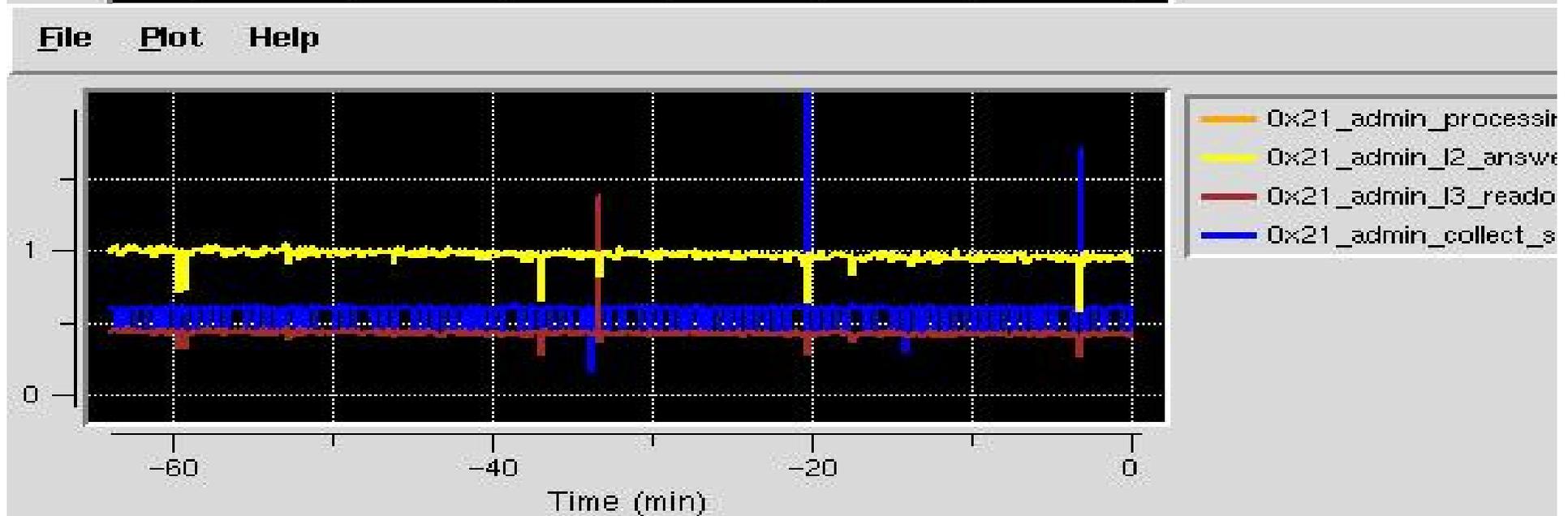
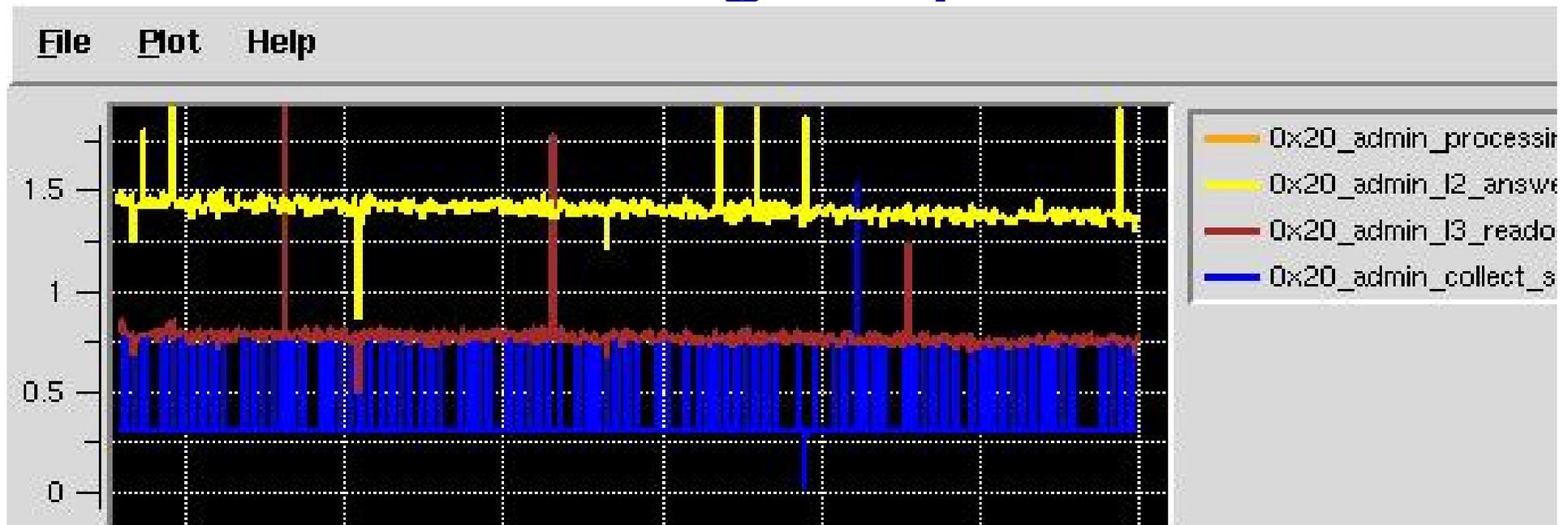
Introduction

- Investigate L1 busy dependence on L2 monitoring
- Investigate features of L1 busy timing chart
 - Spikes

L2 Timing Stripcharts

- Information from L2 Hardware Scalers
 - Collected every 5 seconds by TFW
- Measures time L2 Alpha spends in each state
 - Processing
 - Waiting for L2 decision
 - L3 readout
 - Monitoring
- Compare to L1 Busy
 - Collected at the same time
- Units:
 - time (in minutes) on horizontal axis,
 - fraction (in %) on vertical axis

L2 Timing Stripcharts

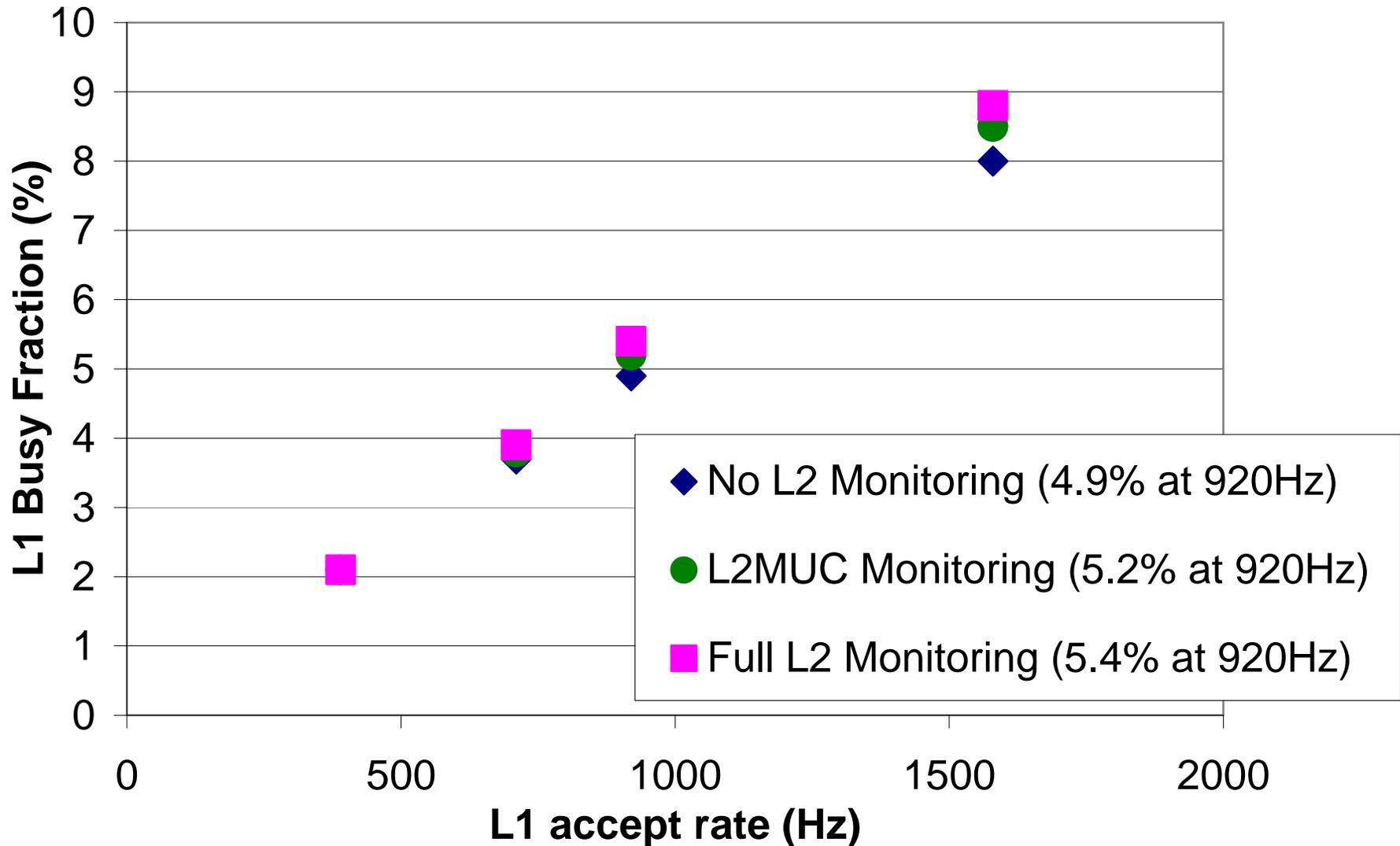


L2 Monitoring Fraction and L1 Busy

- L2 crates at monitoring level 1 (range:0-7)
- Collect monitoring info once every 5 seconds
 - 0.1% monitoring time \Rightarrow 10 milliseconds
 - Latency
- Different crates collect different amounts of information

crate	12gbl	12muc	12muf	12cal
Monitoring fraction (%)	0.3	0.5	0.4	0.25

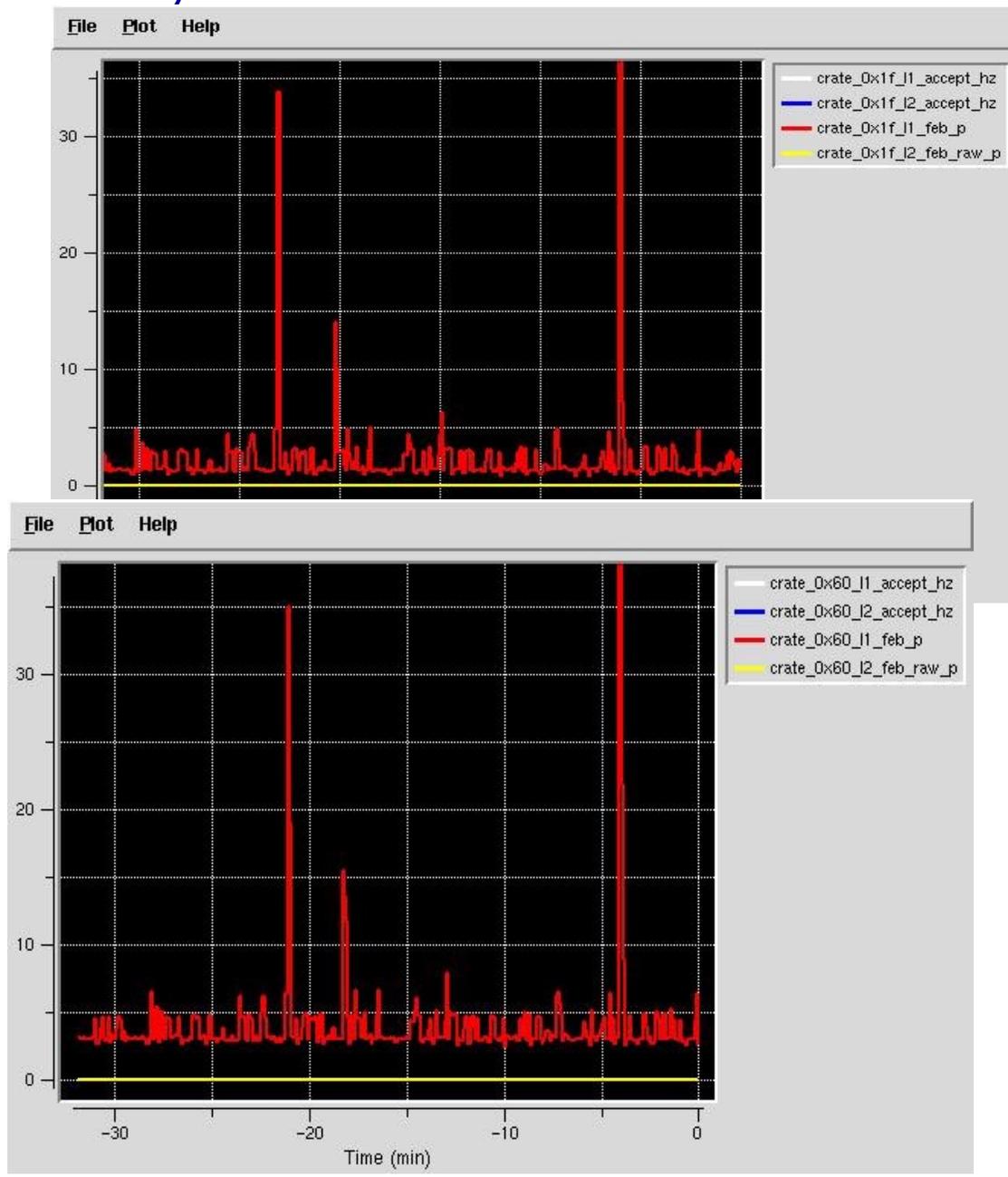
Rate Dependence of L1 Busy/L2 Monitoring



L1 Busy and L2 Monitoring Spikes

- In zero-bias runs
- Look for spikes in L2 monitoring fraction
- Check L1 busy in VRB crates
 - Only 14 buffers → first to issue L1 busy
- One spike from L2 monitoring
 - Sometimes VME communication Alpha-SLIC administrator DSP times out
 - Collect monitoring during data processing

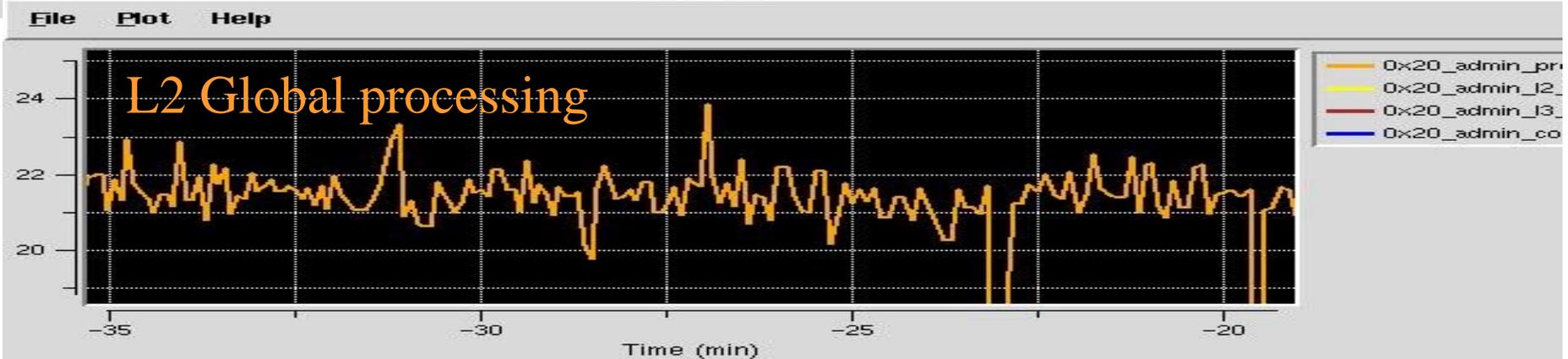
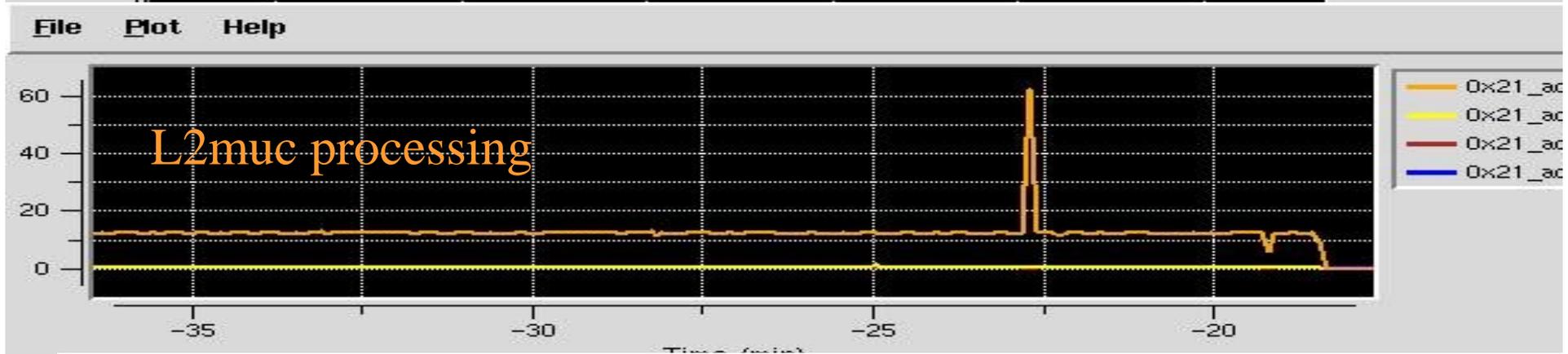
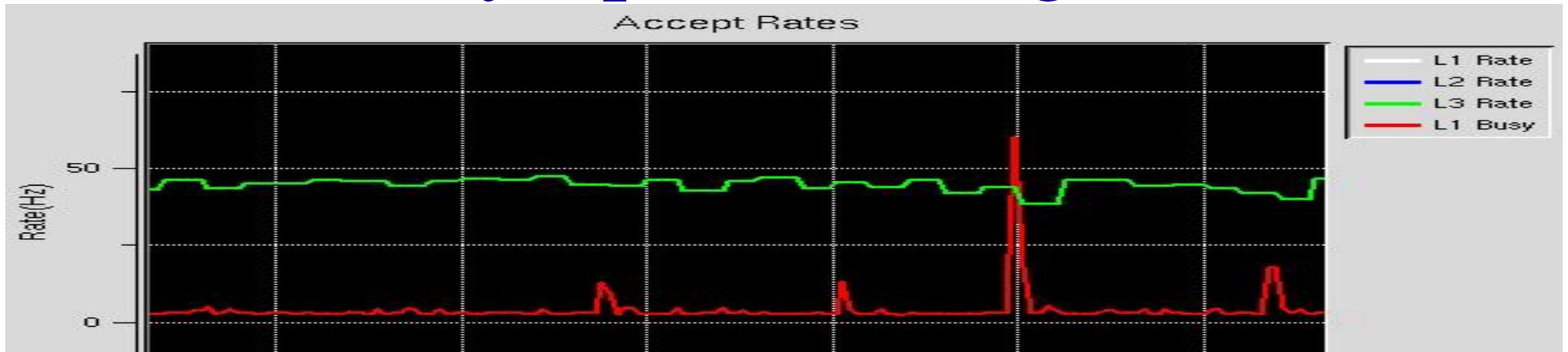
L1 Busy in VRB crates



L1 Busy - busy L2 events - spikes

- Figures from Tuesdays store
- Lots of spikes in the L1 busy distribution
 - Large and small
- Only some large spikes have a clear partner in L2
 - Busy events, long processing time
 - Error messages written to log file for every object found above certain limit (~10 messages for 1 event)
 - Seen so far in l2cal and l2muc

L1 Busy Spikes during a Store



L2 Monitoring - issues/answers

- Monitoring asynchronous
 - Waiting for collect_status bit from TFW (SCL)
 - Reduces monitoring time to that of slowest crate
 - And overlaps it with TFW monitoring (normalization)
 - Will be about 0.5% (l2muc) at high L1 rates
- Error Messages written to disk-resident file
 - Needs to be connected to SES
- Monitoring level can be adjusted
 - Send more information for short times (~runs)