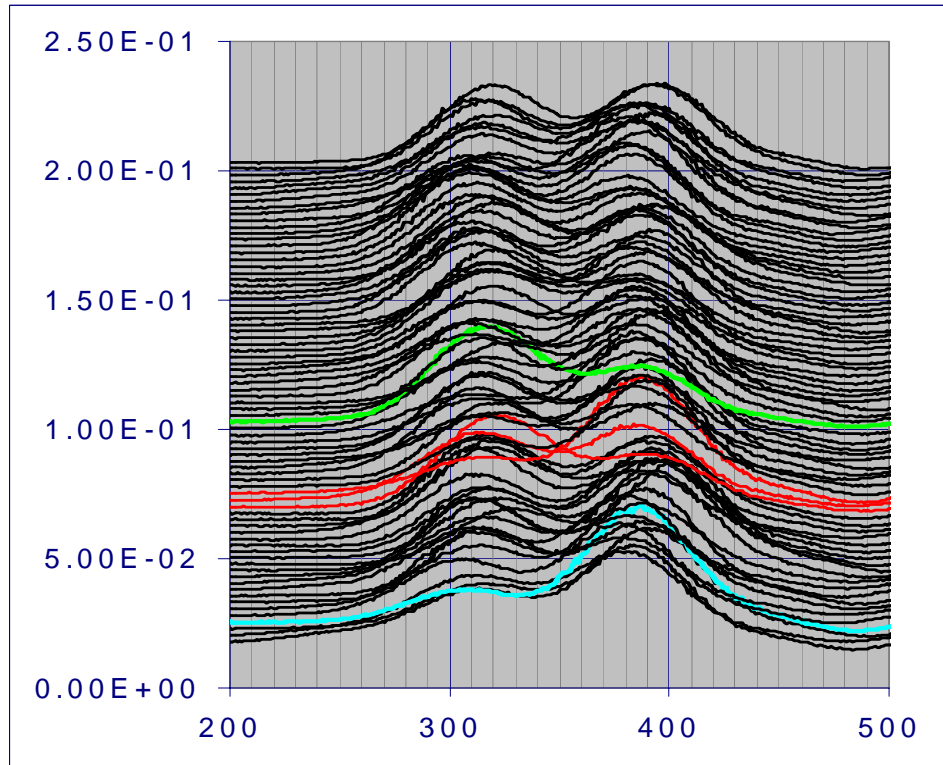




# Split Symmetric Test

Jonathan King

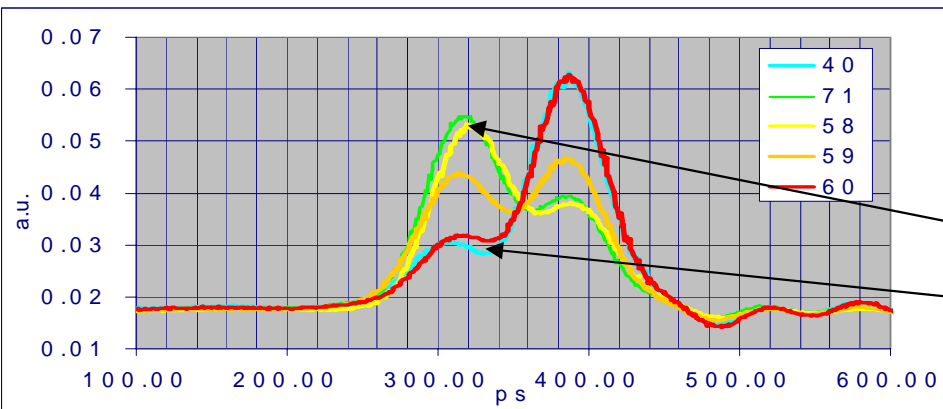
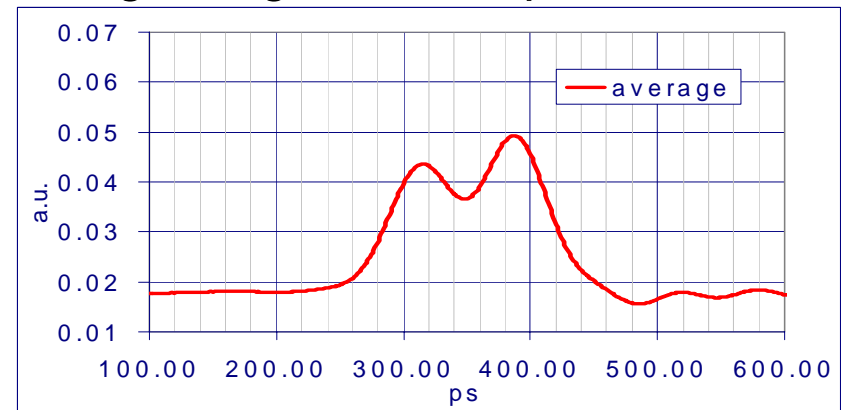
# Quasi-static Impulse Response Measurements



Data from Dynamic Channel Study Group (Nov 04, king-1-1104)

Fibre showed 2 peak impulse response, causal to symmetric to anti-causal IPR variation possible

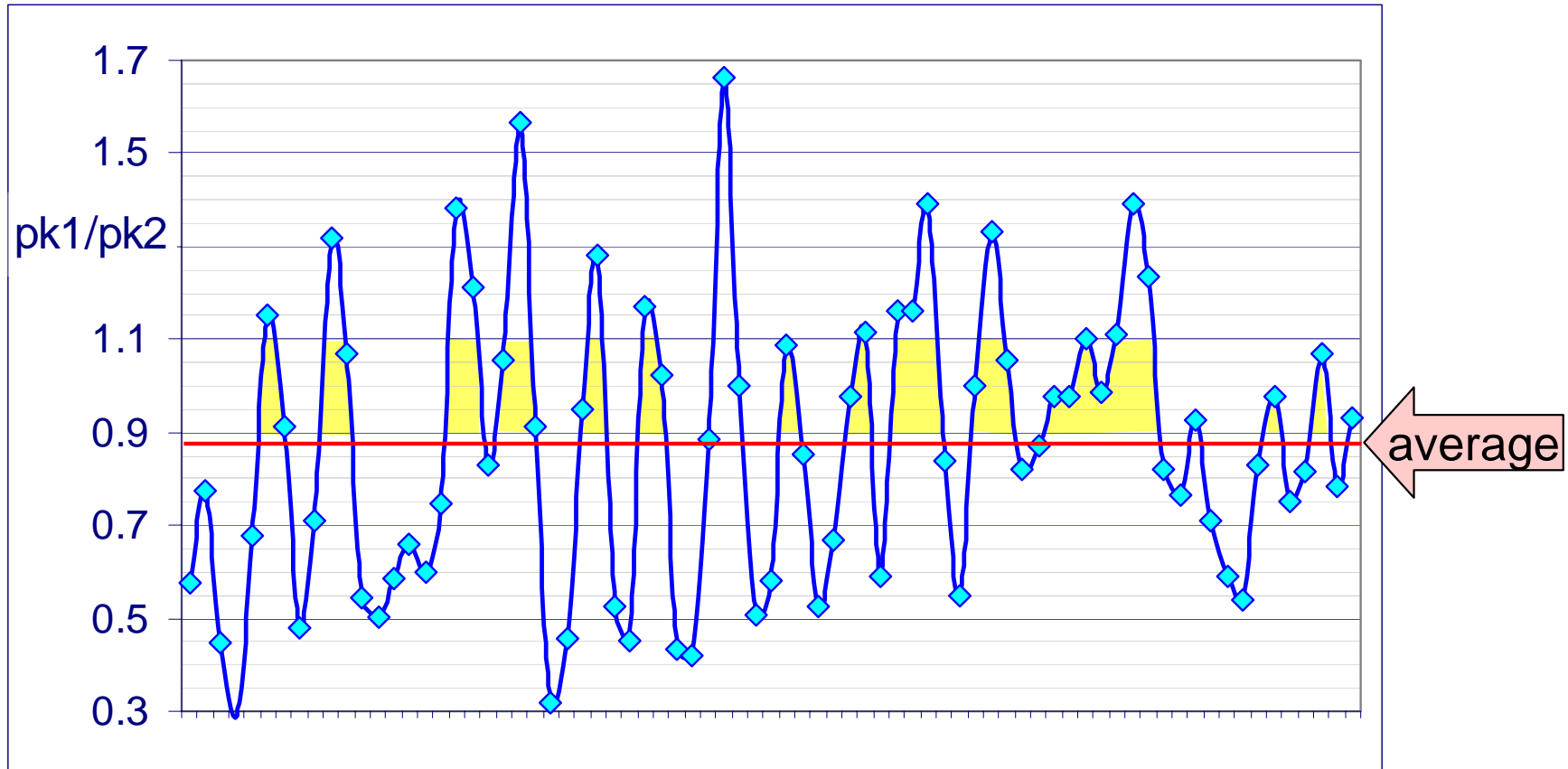
Average height ratio of peaks = 0.88



Max ratio = 1.67

Min ratio = 0.30

# Ratio of Peaks



Ratio of peaks is between 0.9 and 1.1 ~25% of the time

# Summary

- Dynamic behavior of channel not considered in MC67
  - Light passes through the channel ( $\mu\text{s}$ ) much faster than channel evolution rates (100's ms)
    - (ref: King\_1\_1104, and 'Time variance in MMF links - further test results', Rob Coenen)
    - Justification for quasi-static measurements
  - EDC tracking (ms) is much faster than channel evolution rates
    - (ref: Bhoja\_1\_0104)
    - Justification for static channel testing
  - Time variation study group showed how channels may evolve with time
    - (quasi static impulse response work, King\_2\_1104)
    - A channel with an average power impulse response which does not have equal peak heights can spend significant time with split symmetric behavior as the channel evolves
- Split symmetric test is an essential part of checking that the EDC can equalize all channel responses of a dynamically evolving fibre
  - Part of the justification for not needing a dynamic test