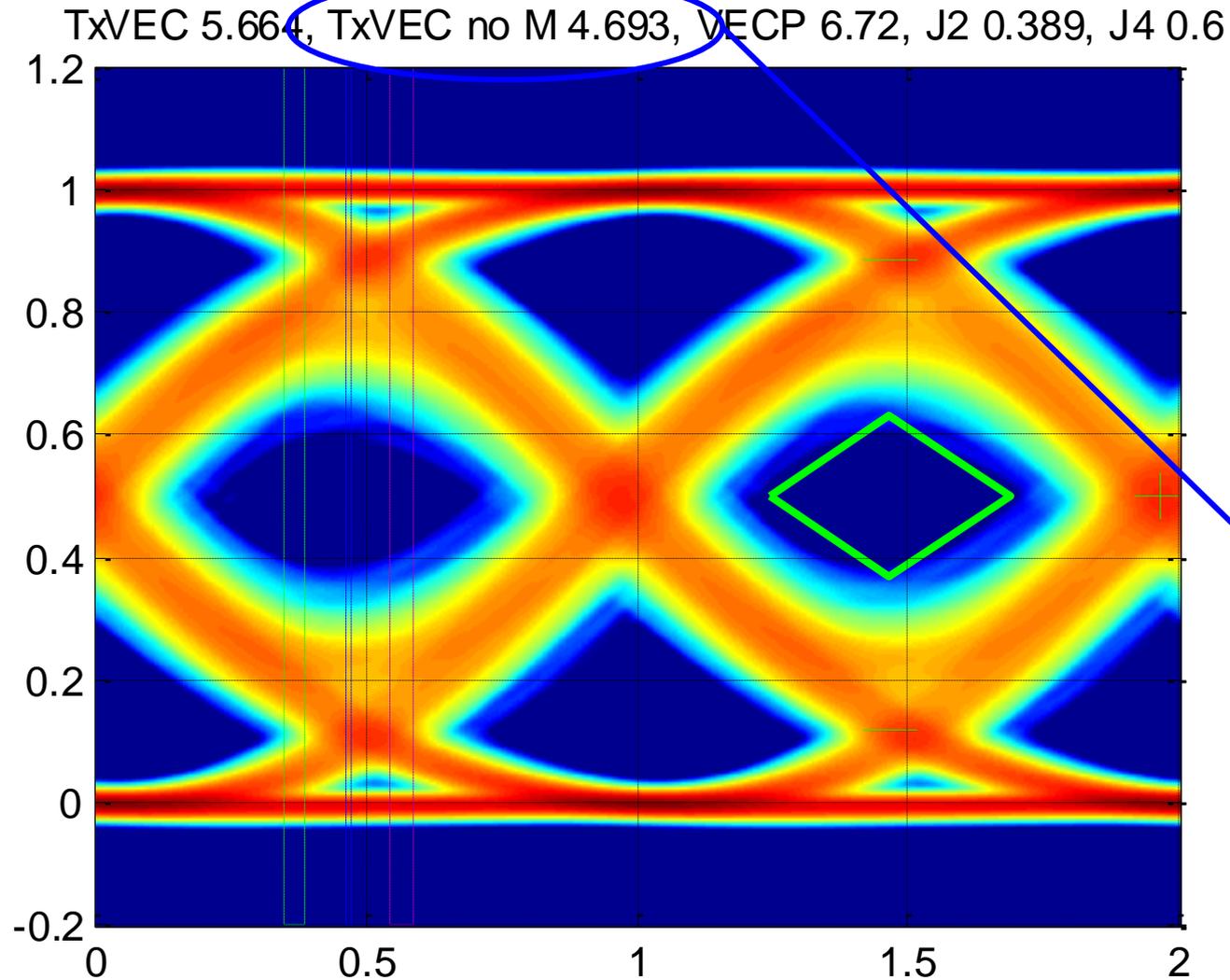# Example Gaussian stressed receiver conformance signals for 100GBASE-SR4

Piers Dawe

Example stressed eye – high Gaussian noise

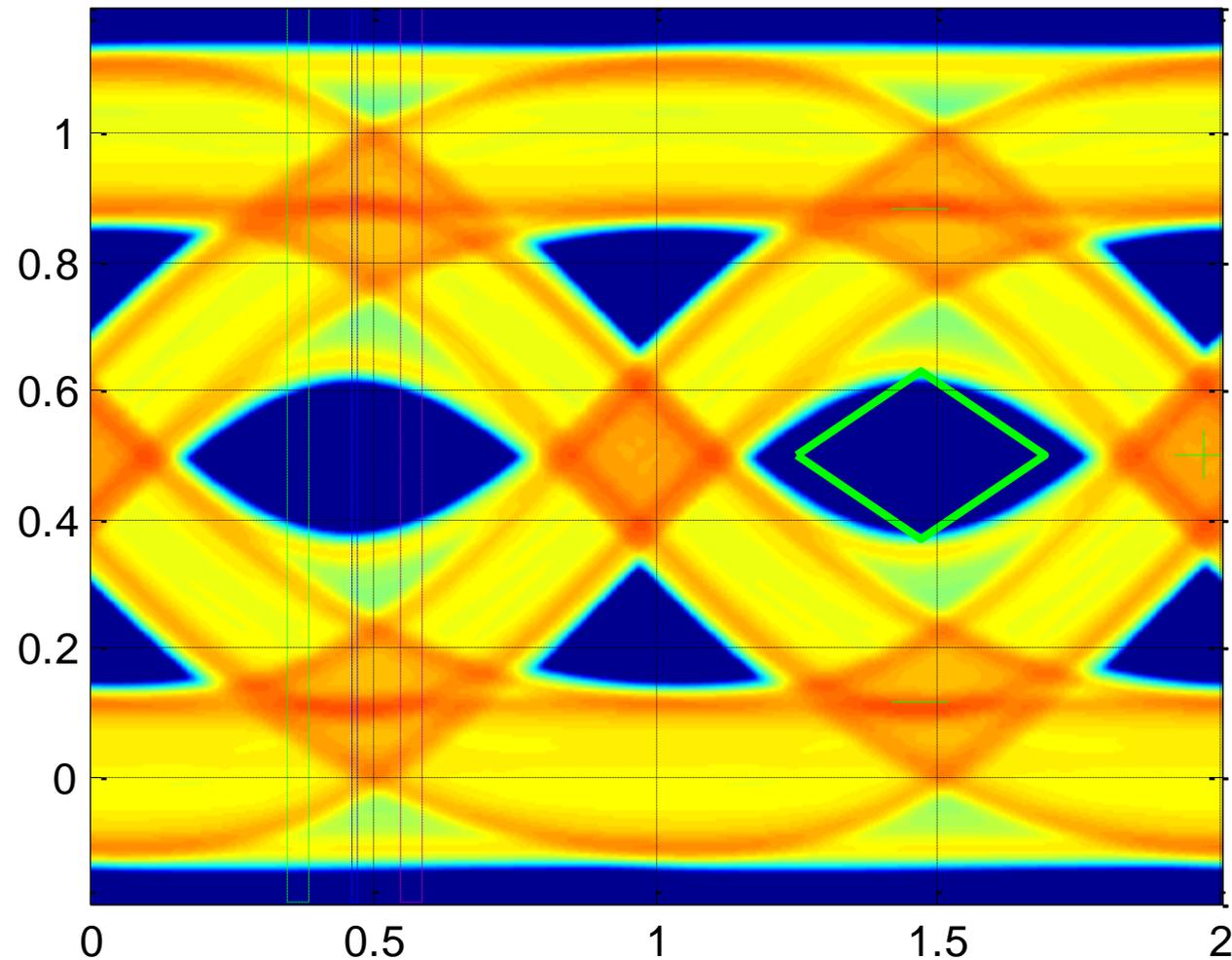TxVEC 5.664, TxVEC no M 4.693, VECP 6.72, J2 0.389, J4 0.6

- SJ=0.05 UI
- No SI
- ~Gaussian interferer
- Second low pass filter bandwidth equivalent to reference slow transmitter and fibre in link model

- Low pass filter alone gives SEC of 2.5 dB
- SEC = 4.7 dB
- VECP is very high, 6.7 dB
- PRBS13
- SEC and J4 values depend on one or two worst bits

See slide 9 for a better simulation

TxVEC 5.959, TxVEC no M 4.878, VECP 6.209, J2 0.382, J4 0.443

- SJ=0.05 UI
- SI1 gives 0.1 UI jitter
- Very little Gaussian interference
- SI2=0.24 (pk-pk) / OMA
- Second low pass filter bandwidth equivalent to reference slow transmitter and fibre in link model
- Low pass filter alone gives SEC of 2.5 dB
- SEC = 4.9 dB
- VECP is very high, 6.2 dB
- PRBS13 or PRBS15, almost the same

TxVEC 5.639, TxVEC no M 4.678, VECP 6.667, J2 0.388, J4 0.557
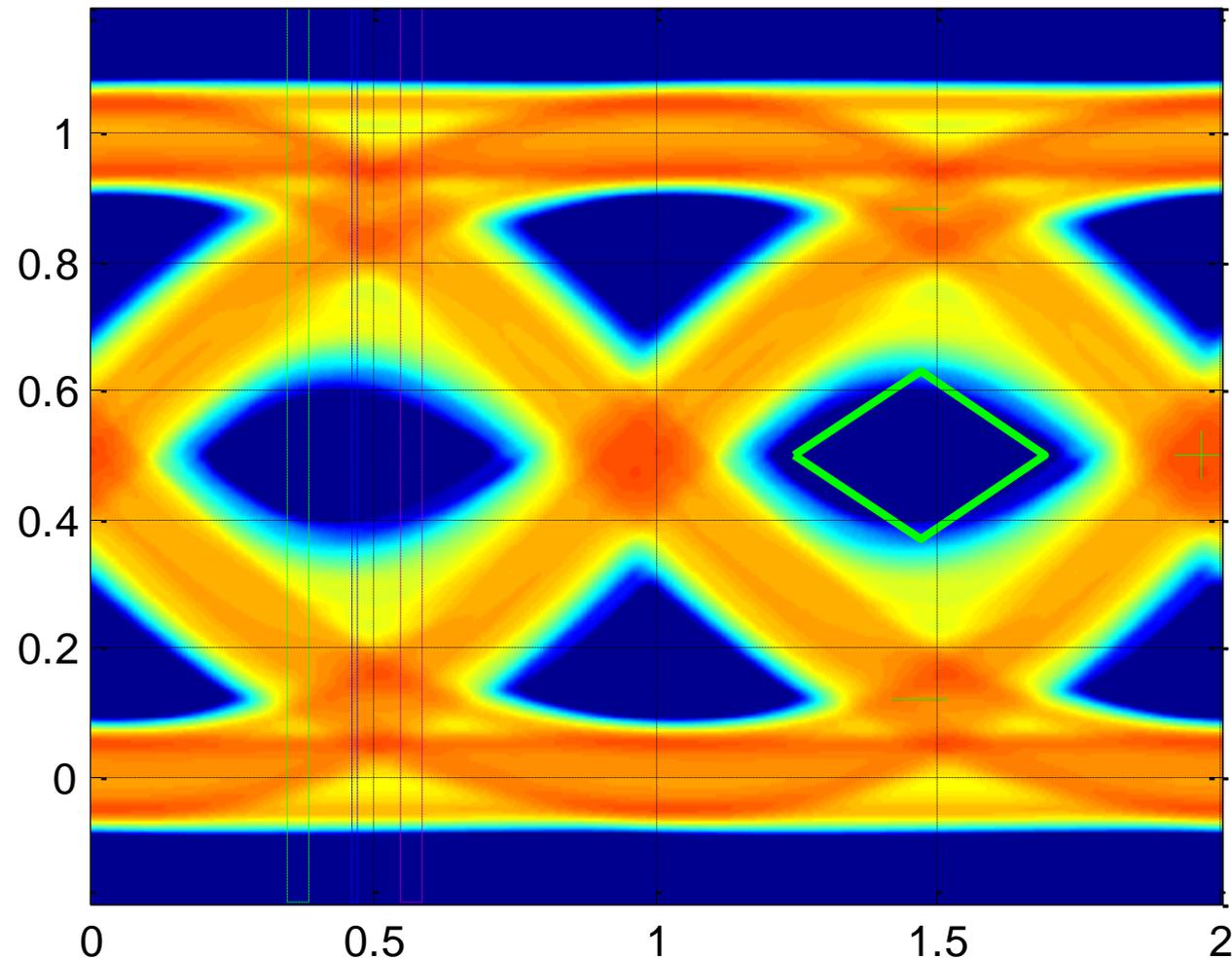
- SJ=0.05 UI
- SI1 gives 0.1 UI jitter
- Some ~Gaussian interference
- SI2=0.12 (pk-pk) / OMA
- Second low pass filter bandwidth equivalent to reference slow transmitter and fibre in link model
- Low pass filter alone gives SEC of 2.5 dB
- SEC = 4.7 dB
- VECP is very high, 6.7 dB
- PRBS13

Example stressed eye – Gaussian noise and SI

TxVEC 8.081, TxVEC no M 5.912, VECP 6.842, J2 0.399, J4 0.929
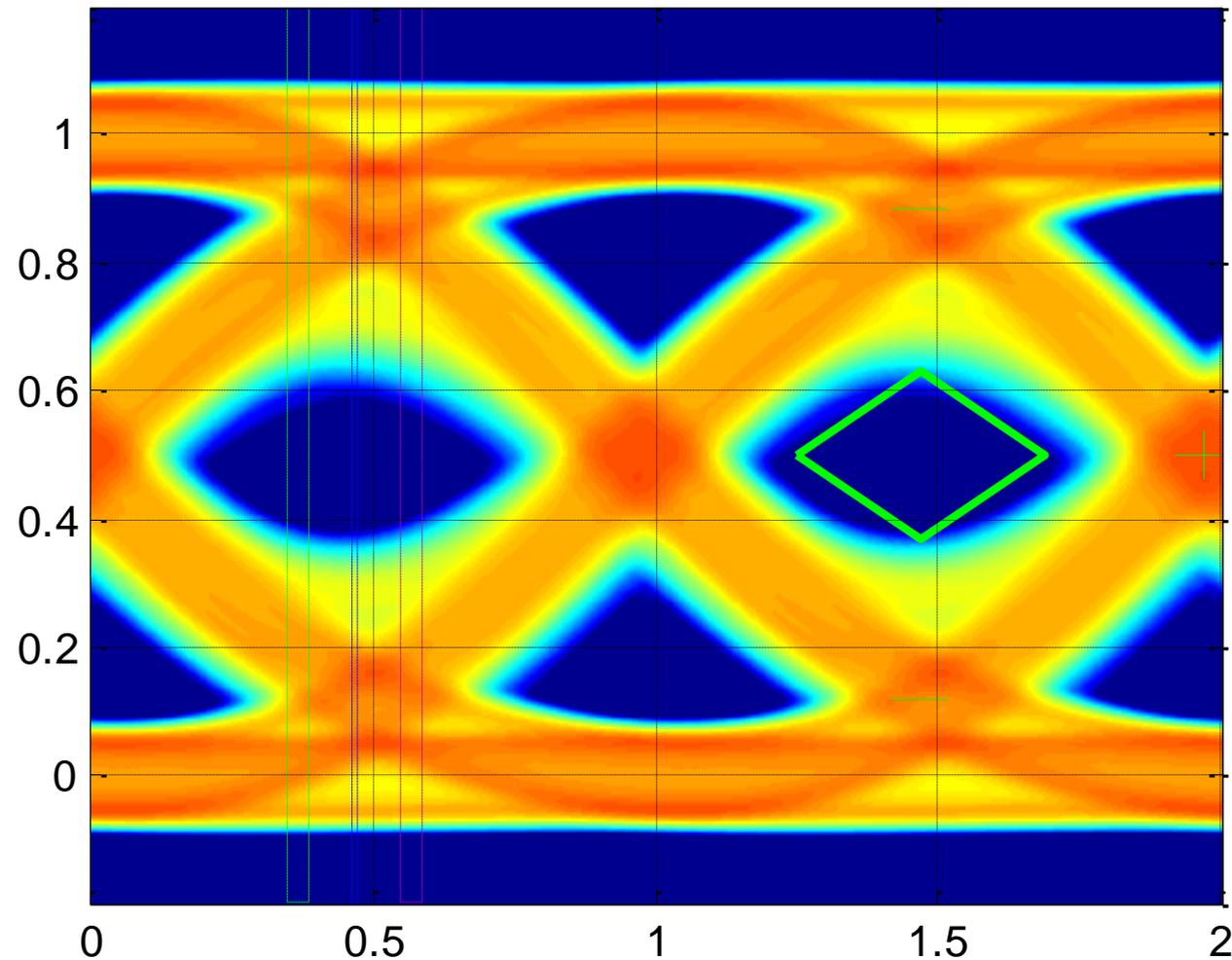
- SJ=0.05 UI
- SI1 gives 0.1 UI jitter
- Some ~Gaussian interference
- SI2=0.12 (pk-pk) / OMA
- Second low pass filter bandwidth equivalent to reference slow transmitter and fibre in link model
- Low pass filter alone gives SEC of 2.5 dB
- SEC = 5.9 dB
- VECP is very high, 6.8 dB
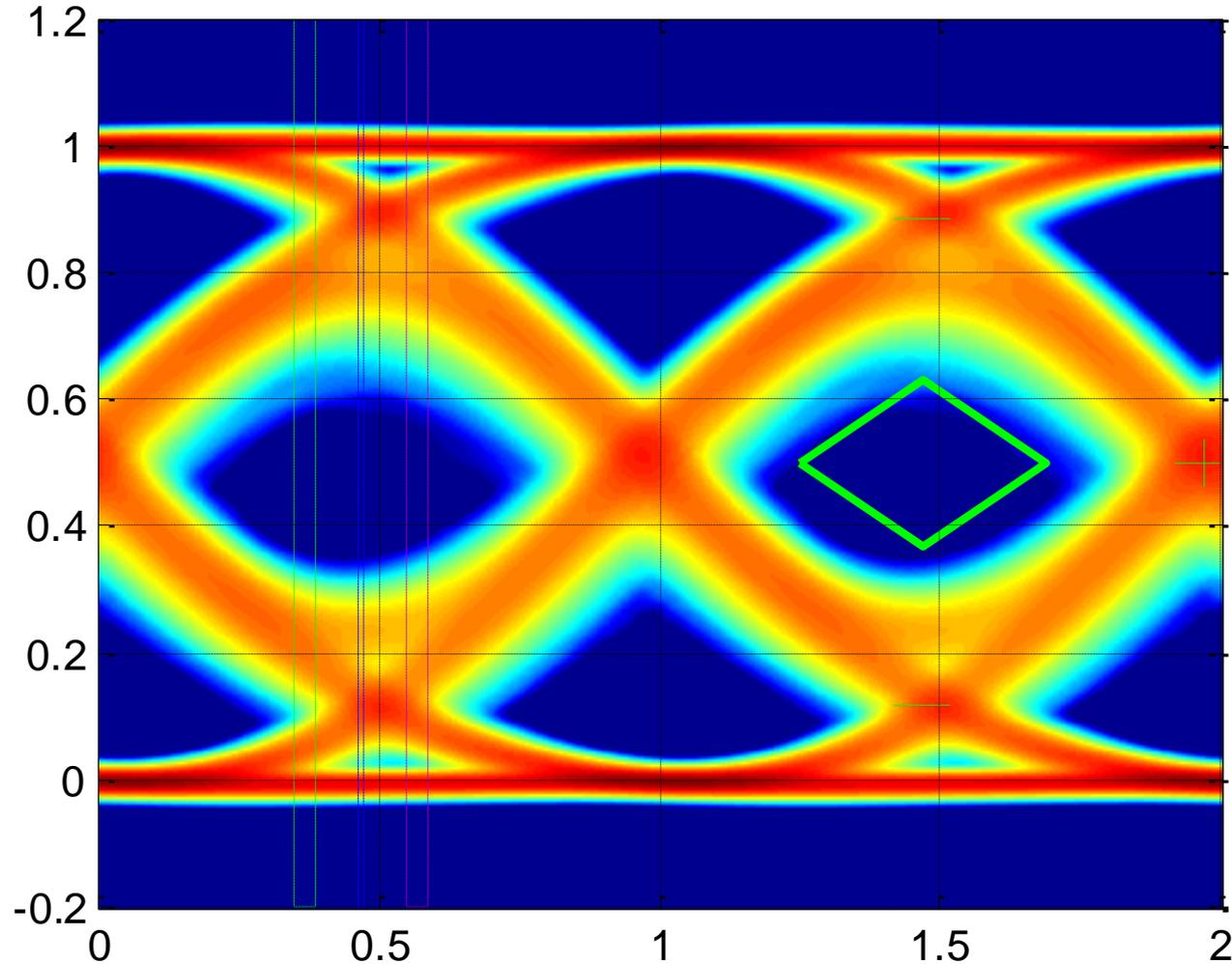- PRBS15

Example stressed eye – Gaussian noise and SI

TxVEC 5.594, TxVEC no M 4.648, VECP 6.262, J2 0.36, J4 0.719
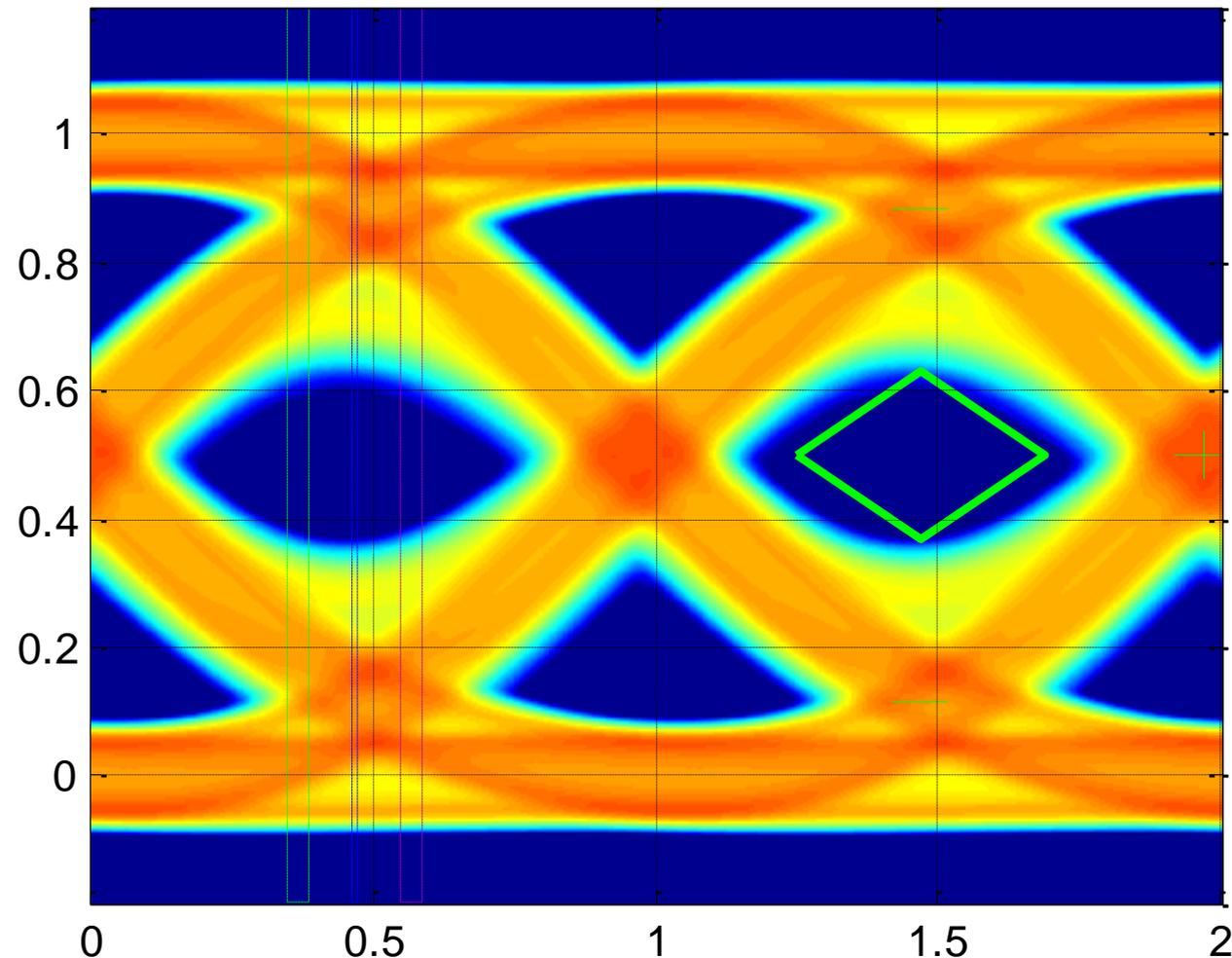
- SJ=0.05 UI
- SI1 gives 0.1 UI jitter
- Slightly less ~Gaussian interference
- SI2=0.12 (pk-pk) / OMA
- Second low pass filter bandwidth equivalent to reference slow transmitter and fibre in link model
- Low pass filter alone gives SEC of 2.5 dB
- SEC = 4.6 dB
- VECP is very high, 6.3 dB
- PRBS15

TxVEC 20, TxVEC no M 9.001, VECP 7.013, J2 0.427, J4 0.973

- SJ=0.05 UI
- No SI
- ~Gaussian interferer, amplitude as on slide 2
- Second low pass filter bandwidth equivalent to reference slow transmitter and fibre in link model

- Low pass filter alone gives SEC of 2.5 dB
- SEC = 9.0 dB
- VECP is very high, 7.0 dB
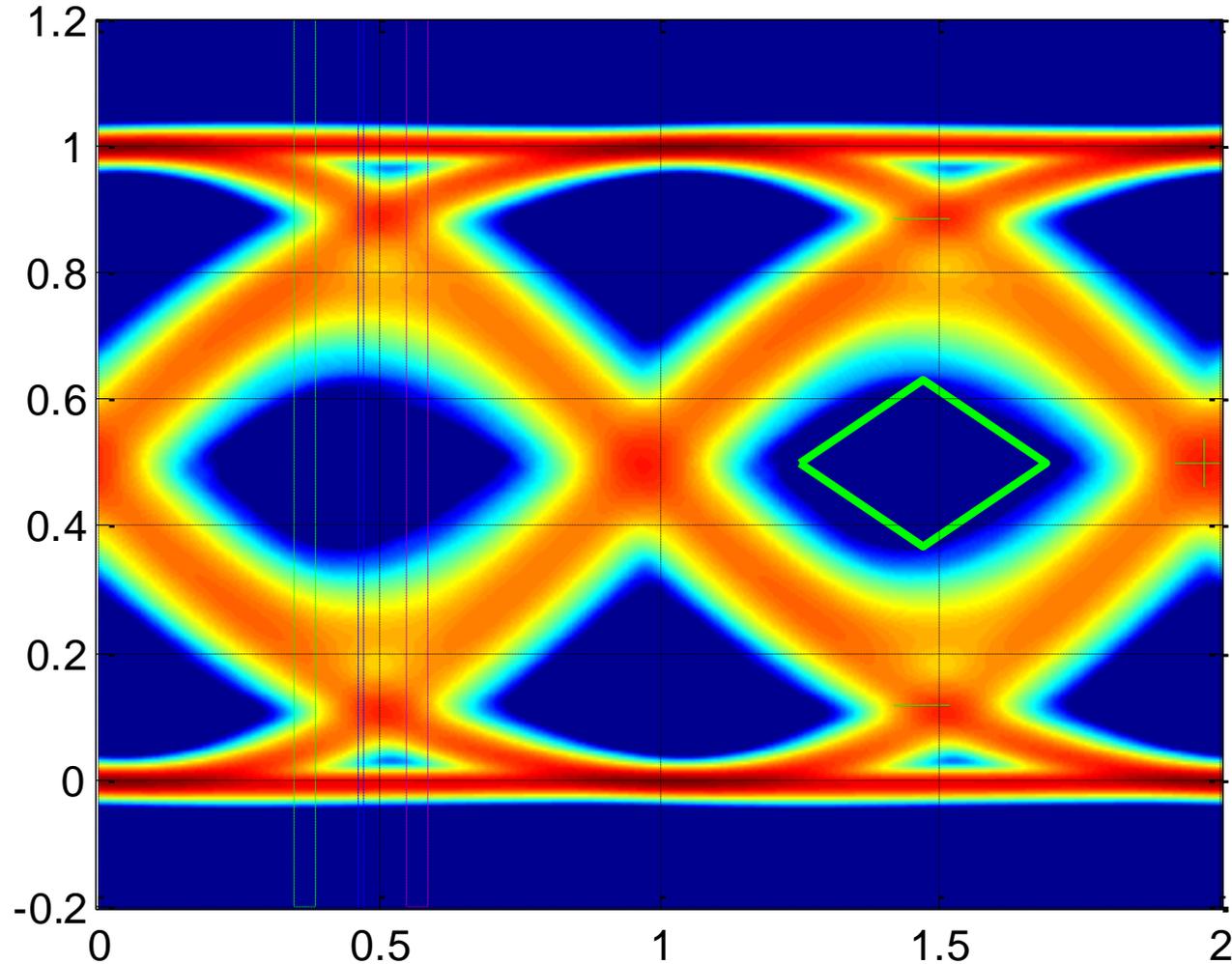- PRBS15

Example stressed eye – high Gaussian noise

TxVEC 5.83, TxVEC no M 4.798, VECP 6.009, J2 0.34, J4 0.803
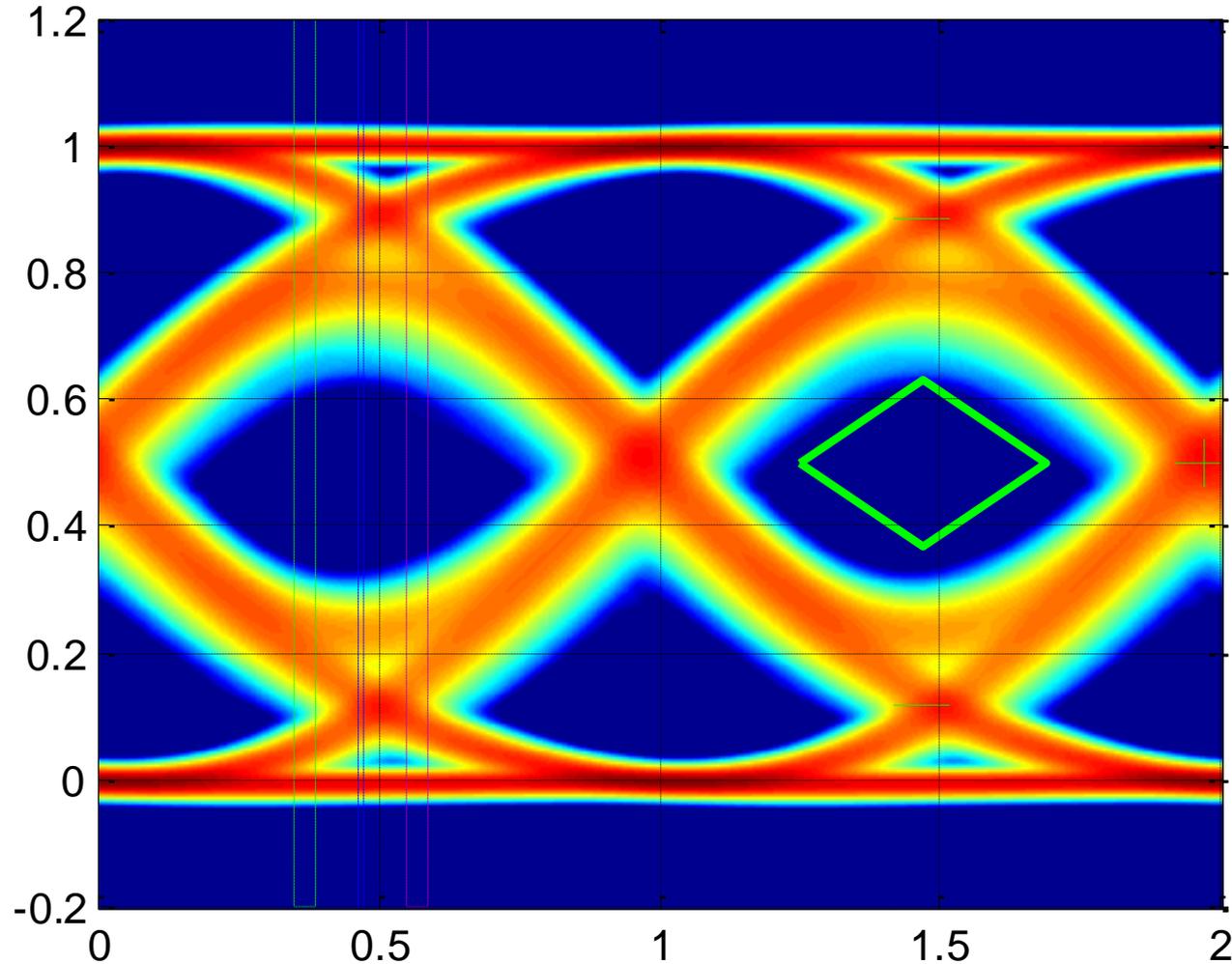
- SJ=0.05 UI
- No SI
- ~Gaussian interferer (amplitude tweaked)
- Second low pass filter bandwidth equivalent to reference slow transmitter and fibre in link model

- Low pass filter alone gives SEC of 2.5 dB
- SEC = 4.8 dB
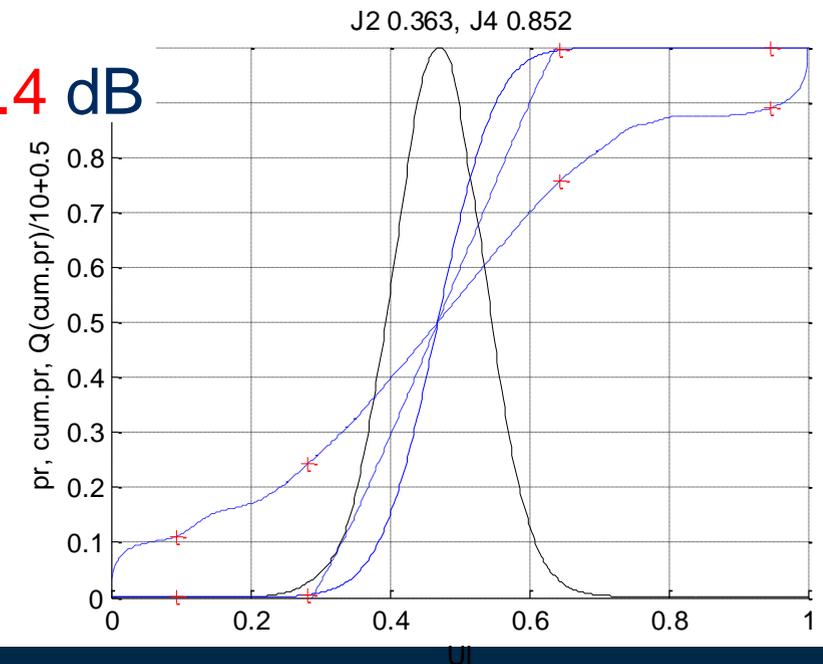- VECP is very high, 6.0 dB
- PRBS15

Example stressed eye – high Gaussian noise

TxVEC 6.033, TxVEC no M 4.922, VECP 6.372, J2 0.363, J4 0.852

- SJ=0.05 UI
- No SI
- Gaussian interferer (more accurate)
- Second low pass filter bandwidth equivalent to reference slow transmitter and fibre in link model

- Low pass filter alone gives SEC of 2.5 dB
- SEC = 4.9 dB
- VECP is very high, 6.4 dB
- PRBS15

This is a more accurate simulation than slide 2 but still shows a problem
It may be that the first low pass filter combined with the noise causes runt pulse(s)

Thank You

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