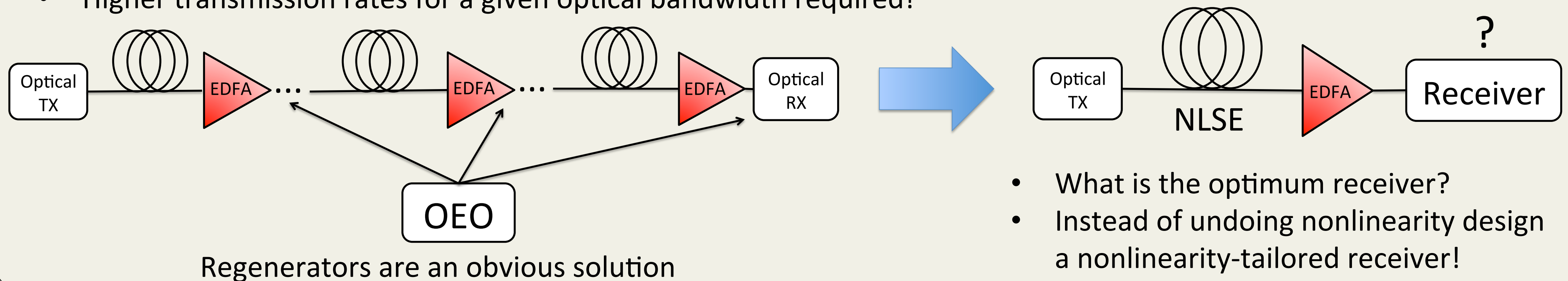
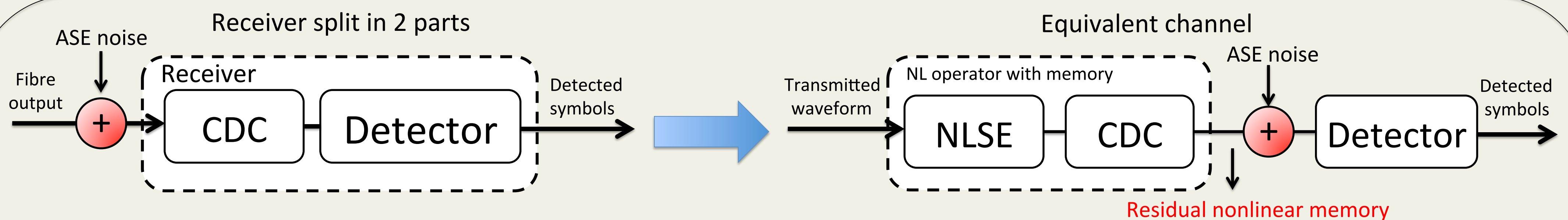


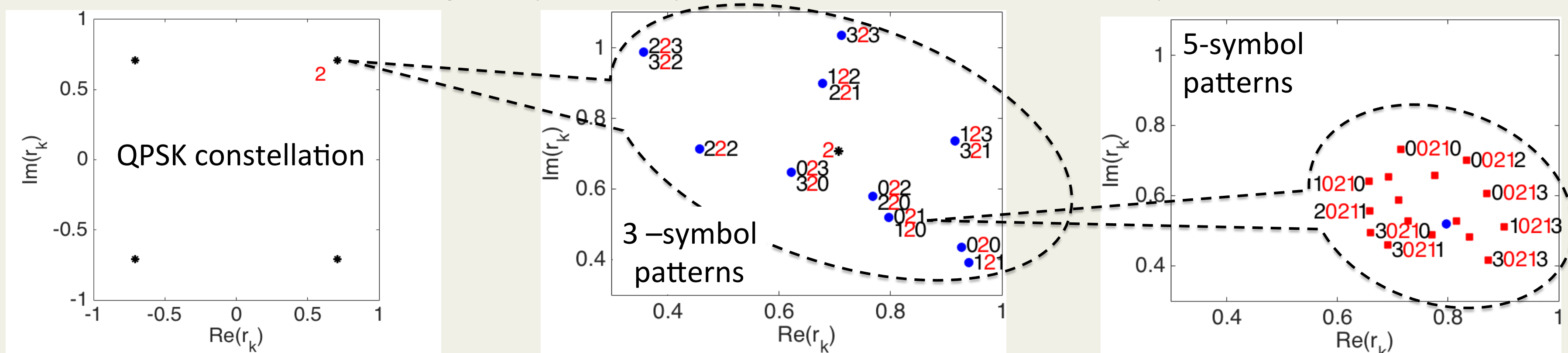
- Optical fibre systems are exhausting their transmission capacity
- Higher transmission rates for a given optical bandwidth required!



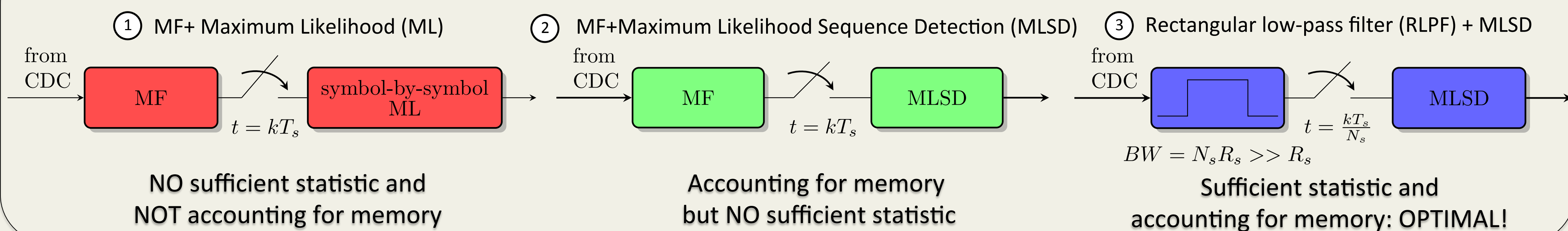
- What is the optimum receiver?
- Instead of undoing nonlinearity design a nonlinearity-tailored receiver!



Observable through the pattern dependence of matched filter (MF) output (QPSK case)

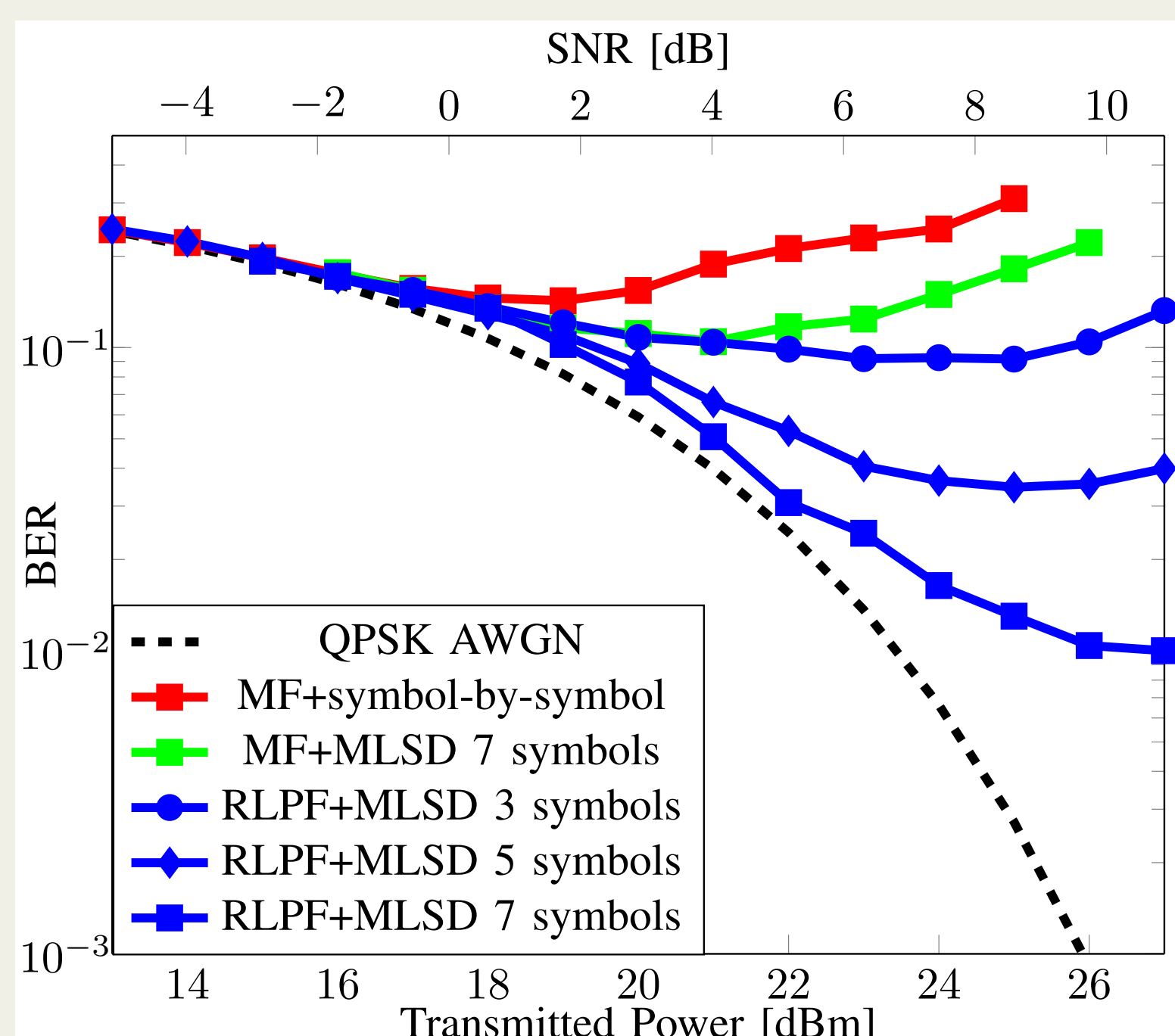


Detection strategies

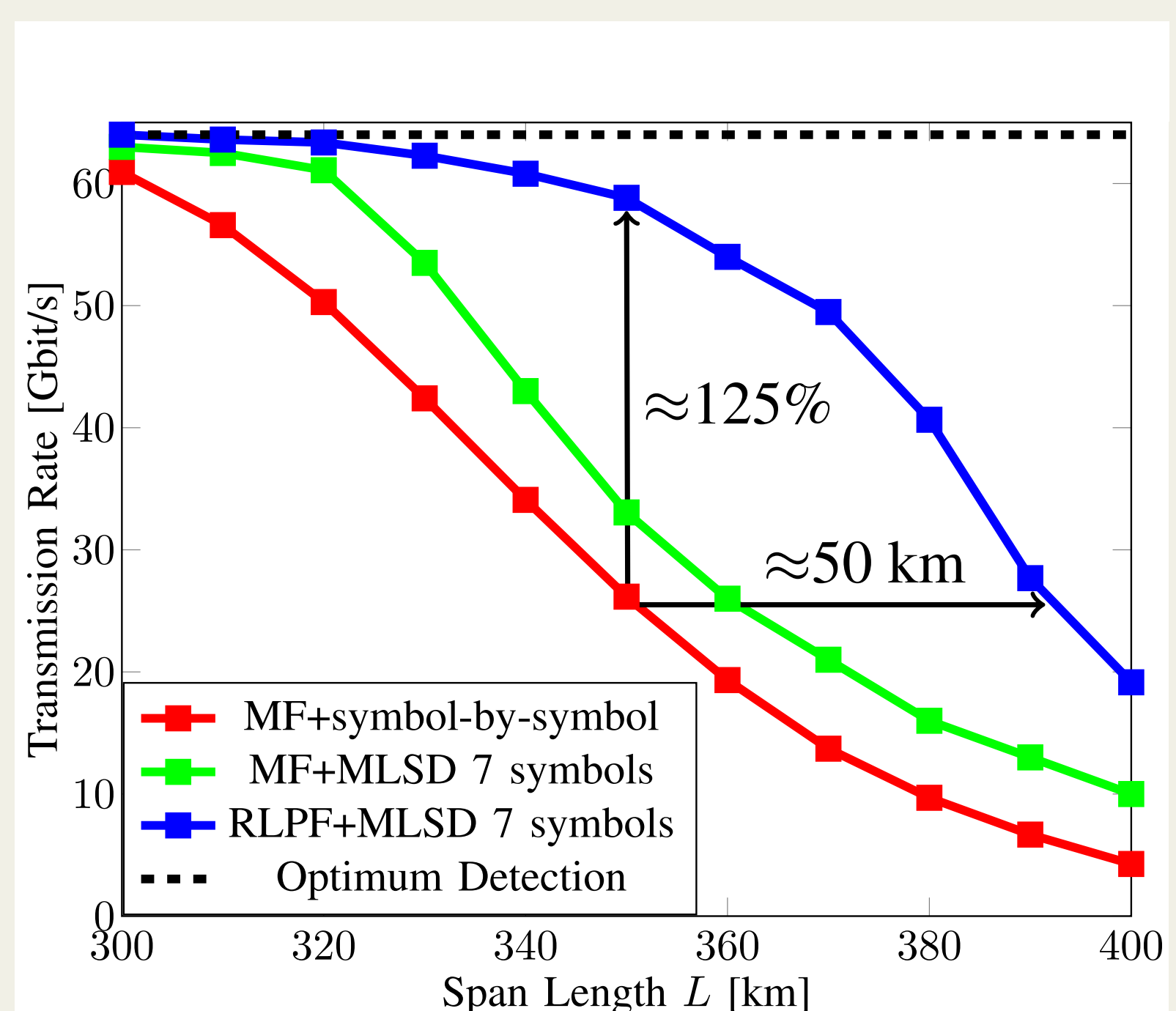


Results (32 Gbaud, Single Span, Single Polarisation QPSK)

Uncoded BER vs. TX Power @ 350 km



Achievable Rates vs. Distance



Conclusions

- Fibre nonlinearity (if decoupled from ASE) is detrimental only if detection is not properly matched to it
- Nonlinearity-tailored receiver : 50 km longer distance or 125% higher transmission rate