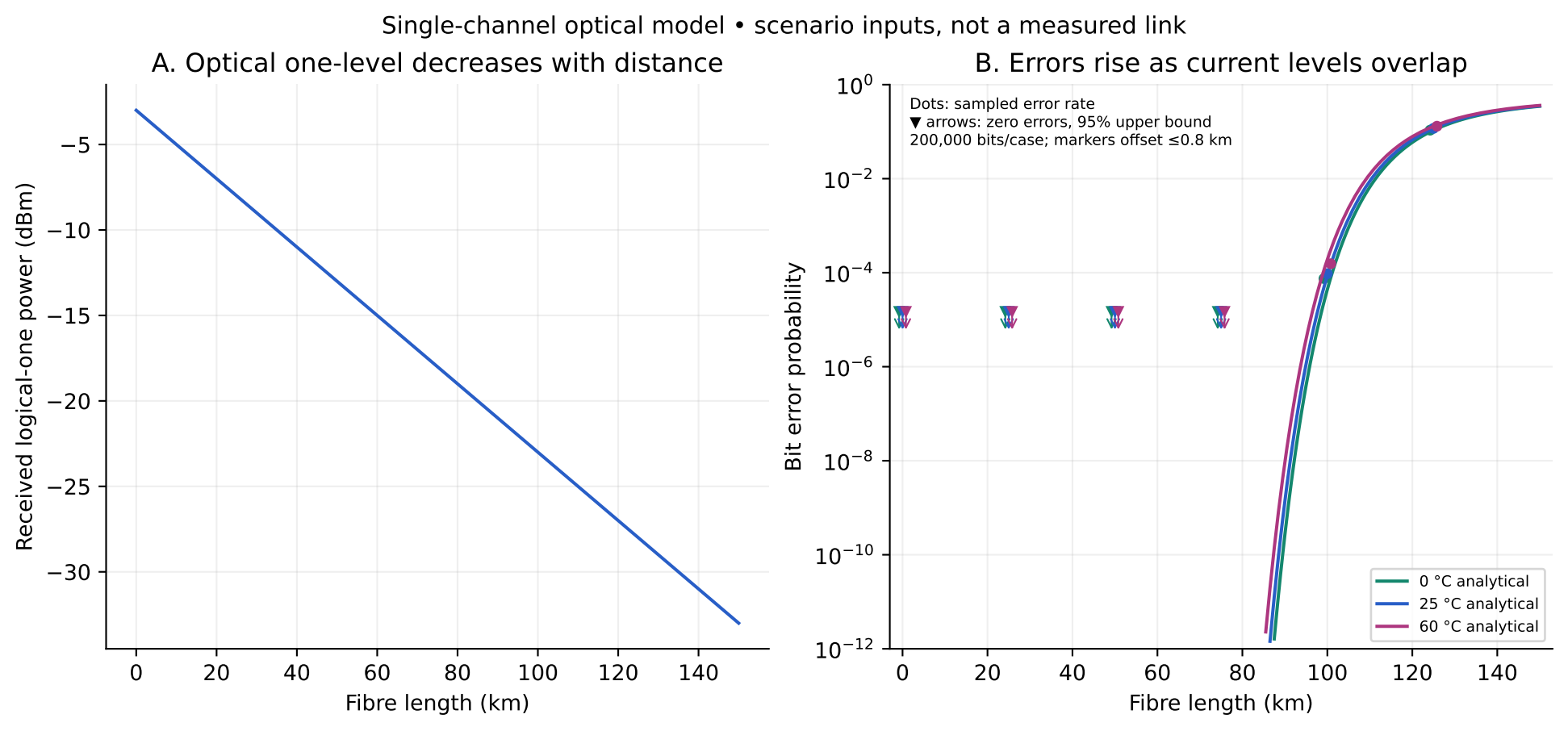

Single-channel optical model • scenario inputs, not a measured link
A. Optical one-level decreases with distance
Received logical-one power (dBm)
−5
−10
−15
−20
−25
−30
0
20
40
60
80
100
120
140
Fibre length (km)
B. Errors rise as current levels overlap
Bit error probability
Dots: sampled error rate
▼ arrows: zero errors, 95% upper bound
200,000 bits/case; markers offset ≤0.8 km
10^{0}
10^{-2}
10^{-4}
10^{-6}
10^{-8}
10^{-10}
10^{-12}
0 °C analytical
25 °C analytical
60 °C analytical
0
20
40
60
80
100
120
140
Fibre length (km)