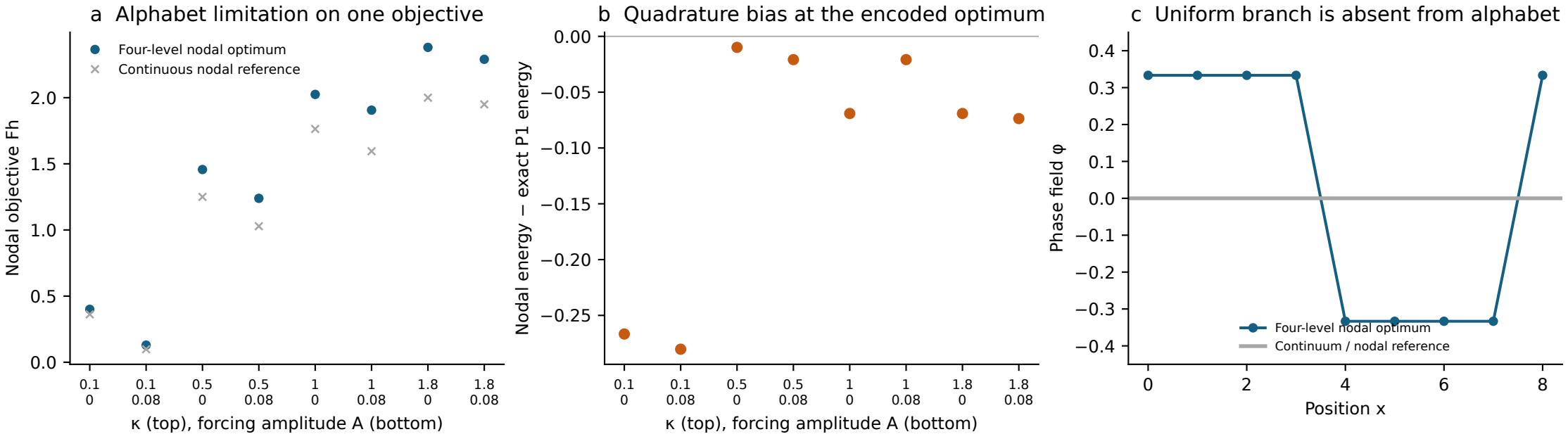

a Alphabet limitation on one objective
Four-level nodal optimum
Continuous nodal reference
Nodal objective Fh
0.0
0.5
1.0
1.5
2.0
0.1
0
0.1
0.08
0.5
0
0.5
0.08
1
0
1
0.08
1.8
0
1.8
0.08
κ (top), forcing amplitude A (bottom)
b Quadrature bias at the encoded optimum
Nodal energy − exact P1 energy
0.00
−0.05
−0.10
−0.15
−0.20
−0.25
κ (top), forcing amplitude A (bottom)
c Uniform branch is absent from alphabet
Phase field φ
0.4
0.3
0.2
0.1
0.0
−0.1
−0.2
−0.3
−0.4
Four-level nodal optimum
Continuum / nodal reference
0
2
4
6
8
Position x