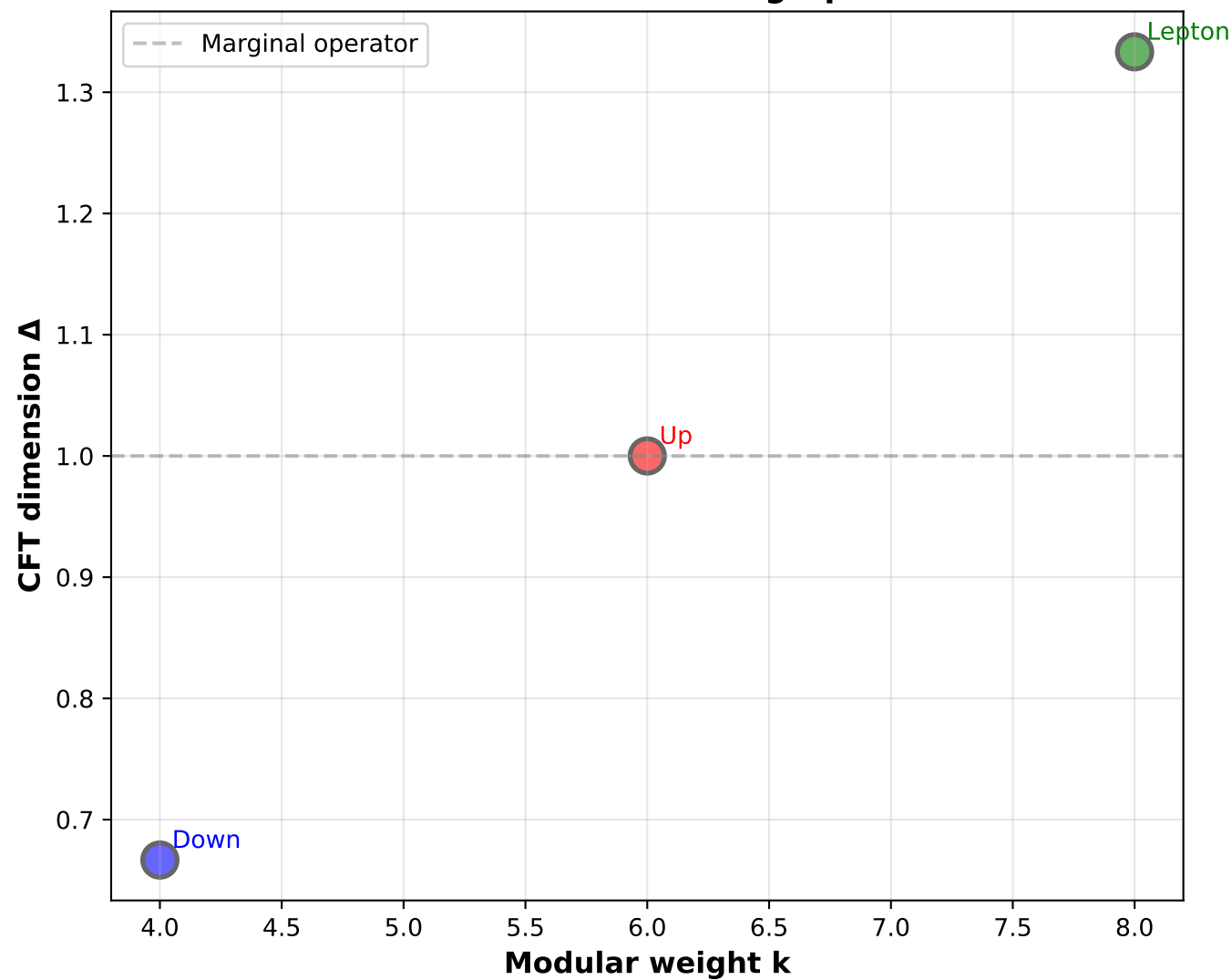
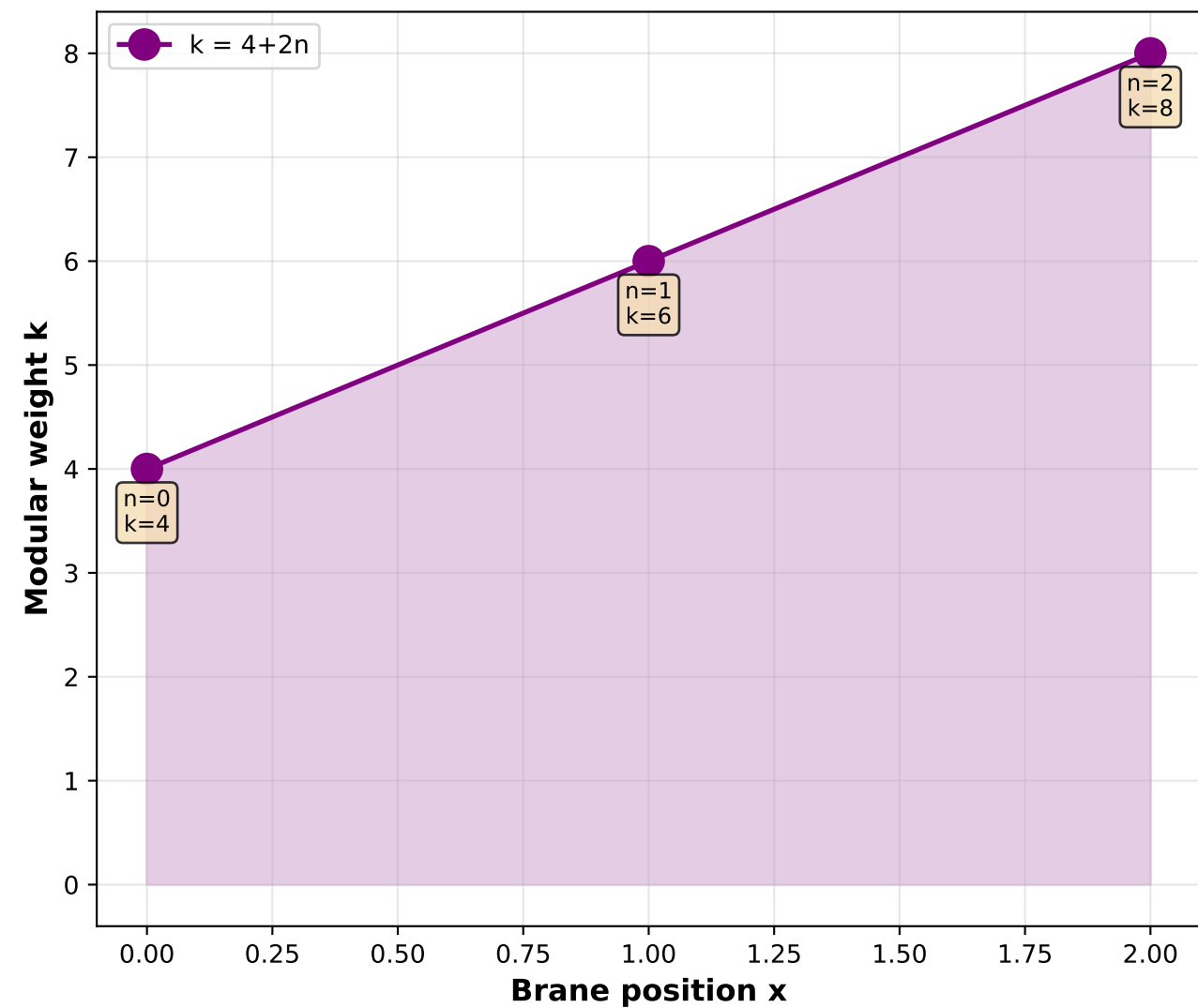


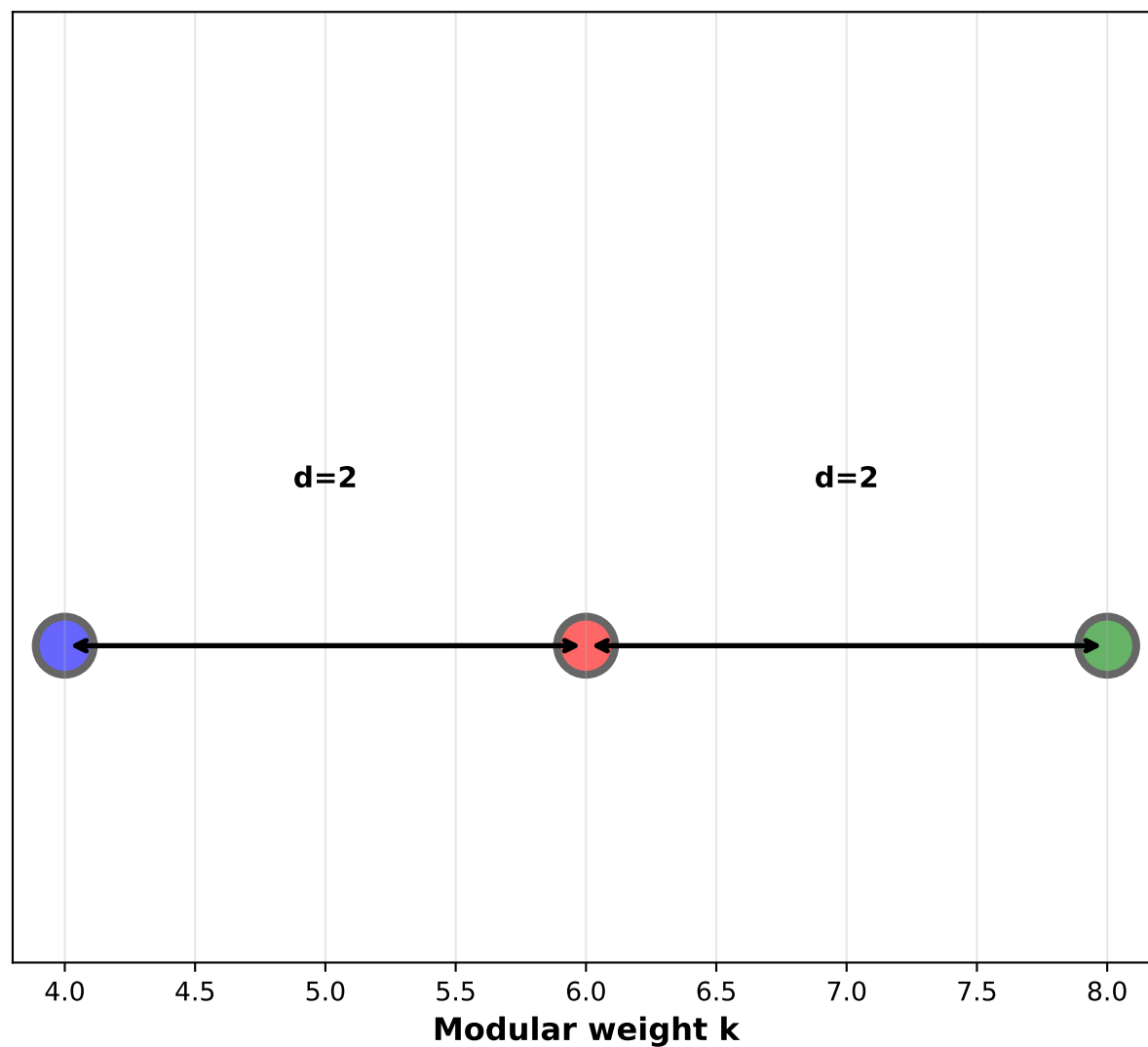
**A: Modular Flavor  $\rightarrow$  Holographic CFT**



**B:  $\Delta k = 2 \leftrightarrow 1$  bit of information**



**C: Code distance  $d=2 \rightarrow$  Detectable errors**



#### UNIFIED PICTURE

Information substrate  
 $\downarrow$   
 Error-correcting code  
 $\downarrow$   
 Spacetime locality emerges  
 $\downarrow$   
 String theory (unique consistent code)  
 $\downarrow$   
 D-branes at  $x = (0, 1, 2)$   
 $\downarrow$   
 Flux quantization:  $n = (0, 1, 2)$   
 $\downarrow$   
 Modular weights:  $k = 4 + 2n = (4, 6, 8)$   
 $\downarrow$   
 Modular parameter:  $\tau = 13/\Delta k \approx 3.25i$   
 $\downarrow$   
 Yukawa couplings:  $Y \propto e^{(2\pi i k \tau)}$   
 $\downarrow$   
 Observable masses:  $m_i / m_j = |Y_i / Y_j|$   
 Zero free parameters in flavor sector!