

$$N_f = 2$$

 ∞
 m_s
 $O(4)$
 $U(2)_L \otimes U(2)_R / U(2)_V$
 Z_2
 1^{st}

● *Physical point*

 $N_f = 3$

Crossover

?

0

 $m_{u,d}$
 $N_f = 1$
