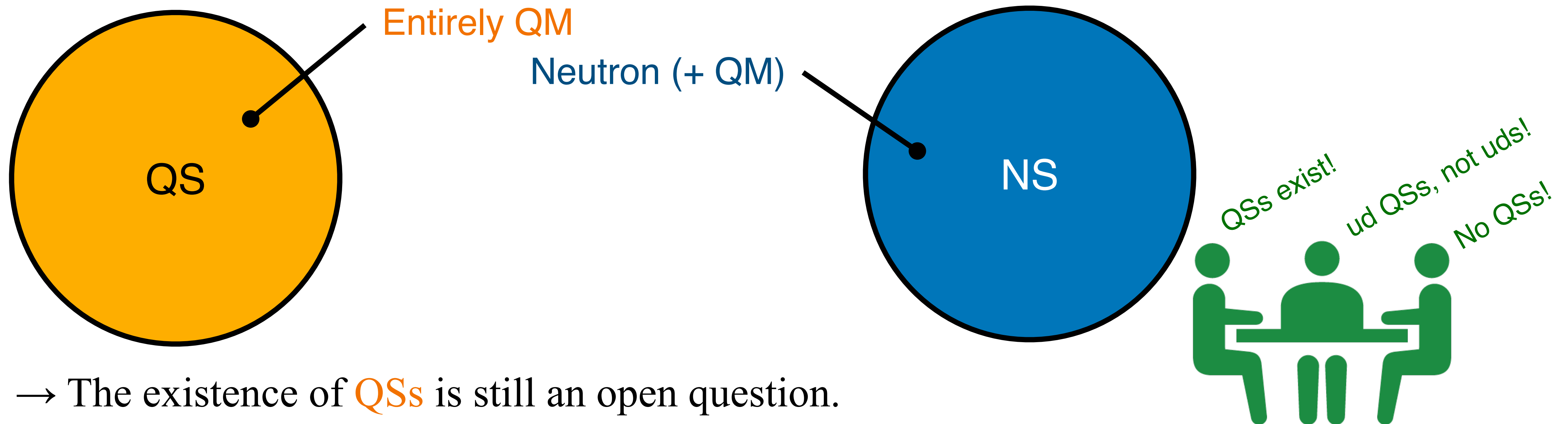


Magnetic-type Love number differentiating quark stars from neutron stars

Josuke Minamiguchi, Kenji Fukushima and Tomoya Uji (The University of Tokyo)

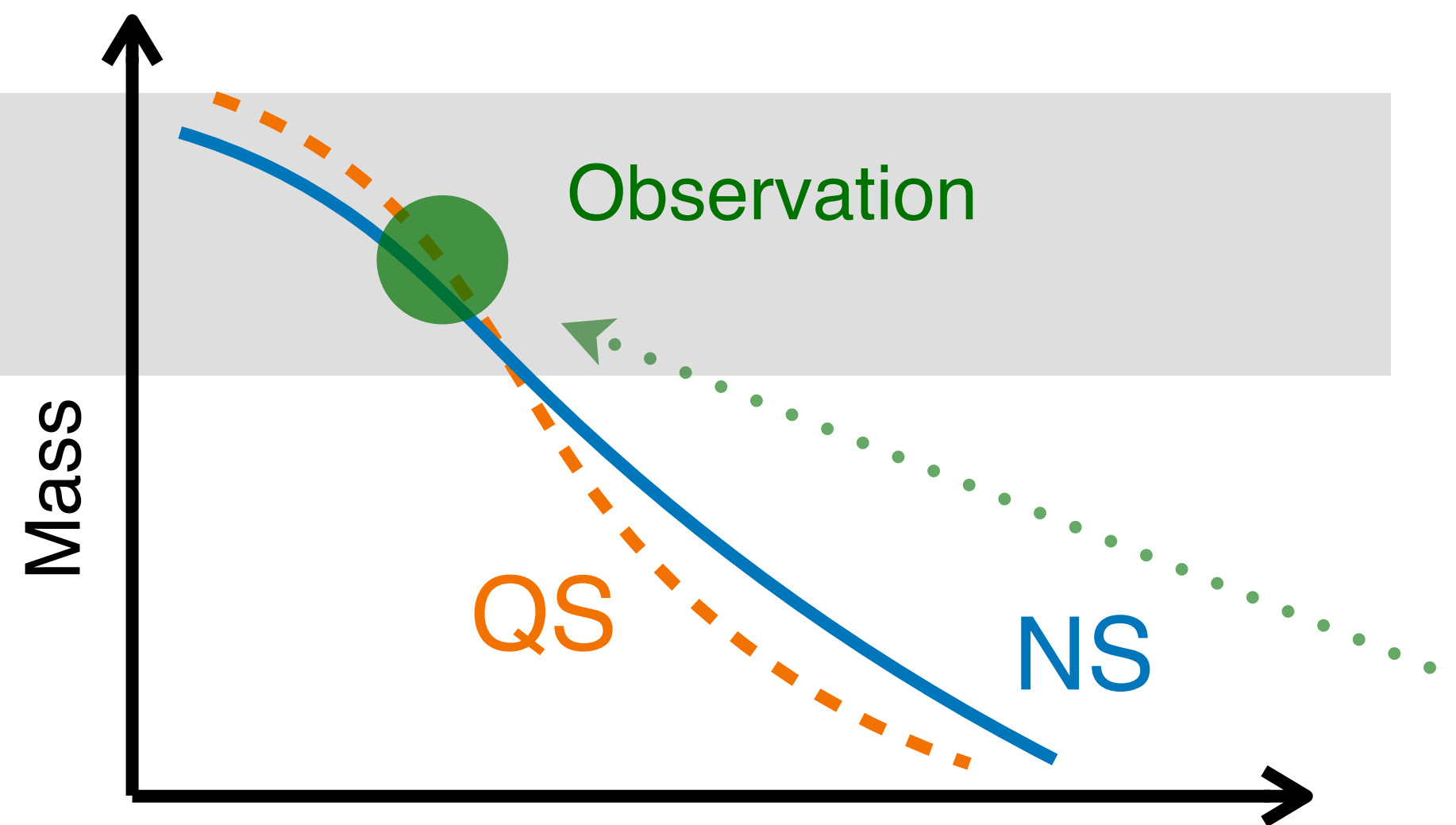
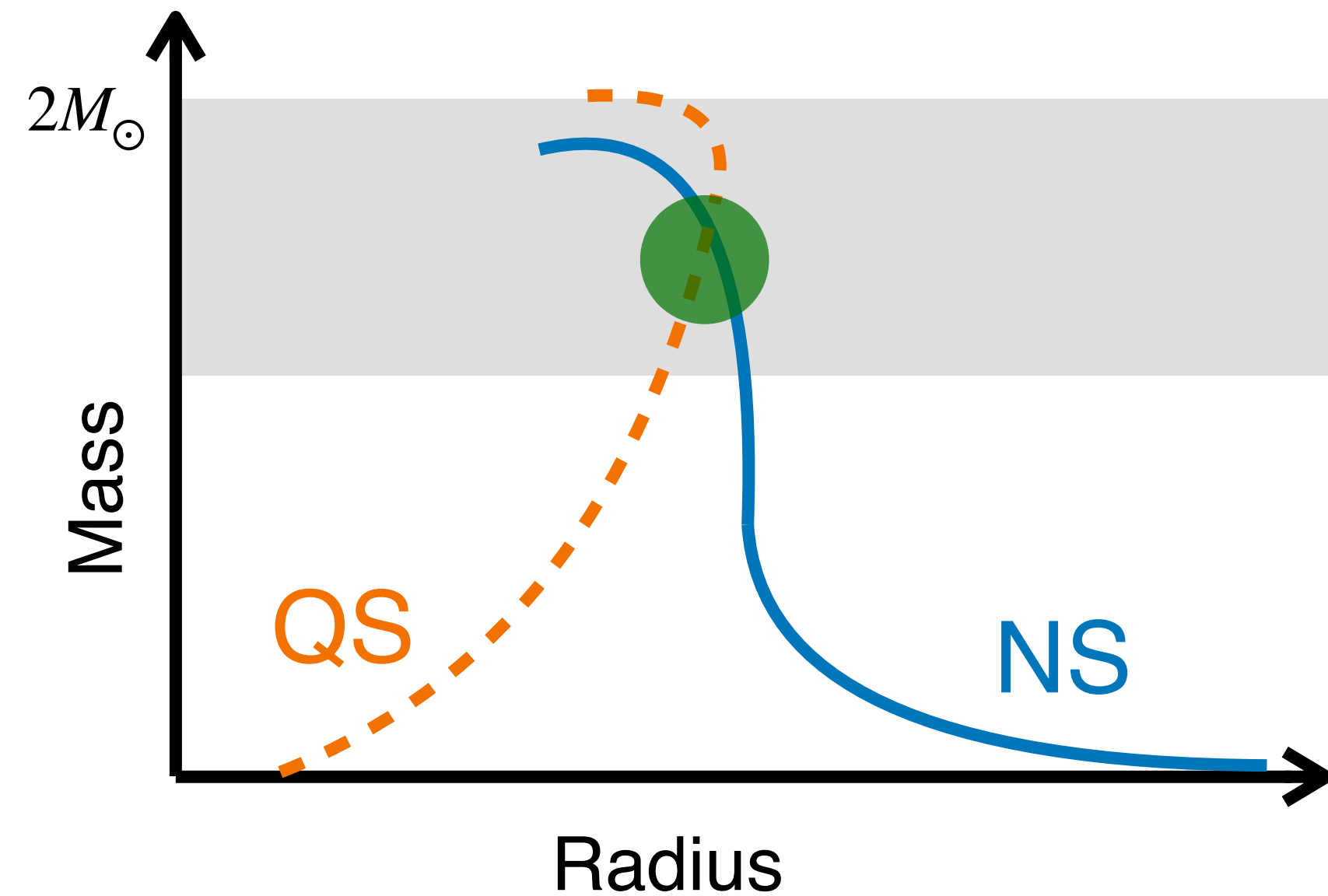
QS is a compact object entirely composed of quark matter (QM).



→ The existence of QSs is still an open question.

Problem in Observations

It is difficult to distinguish QSs from NSs within the observed mass range.

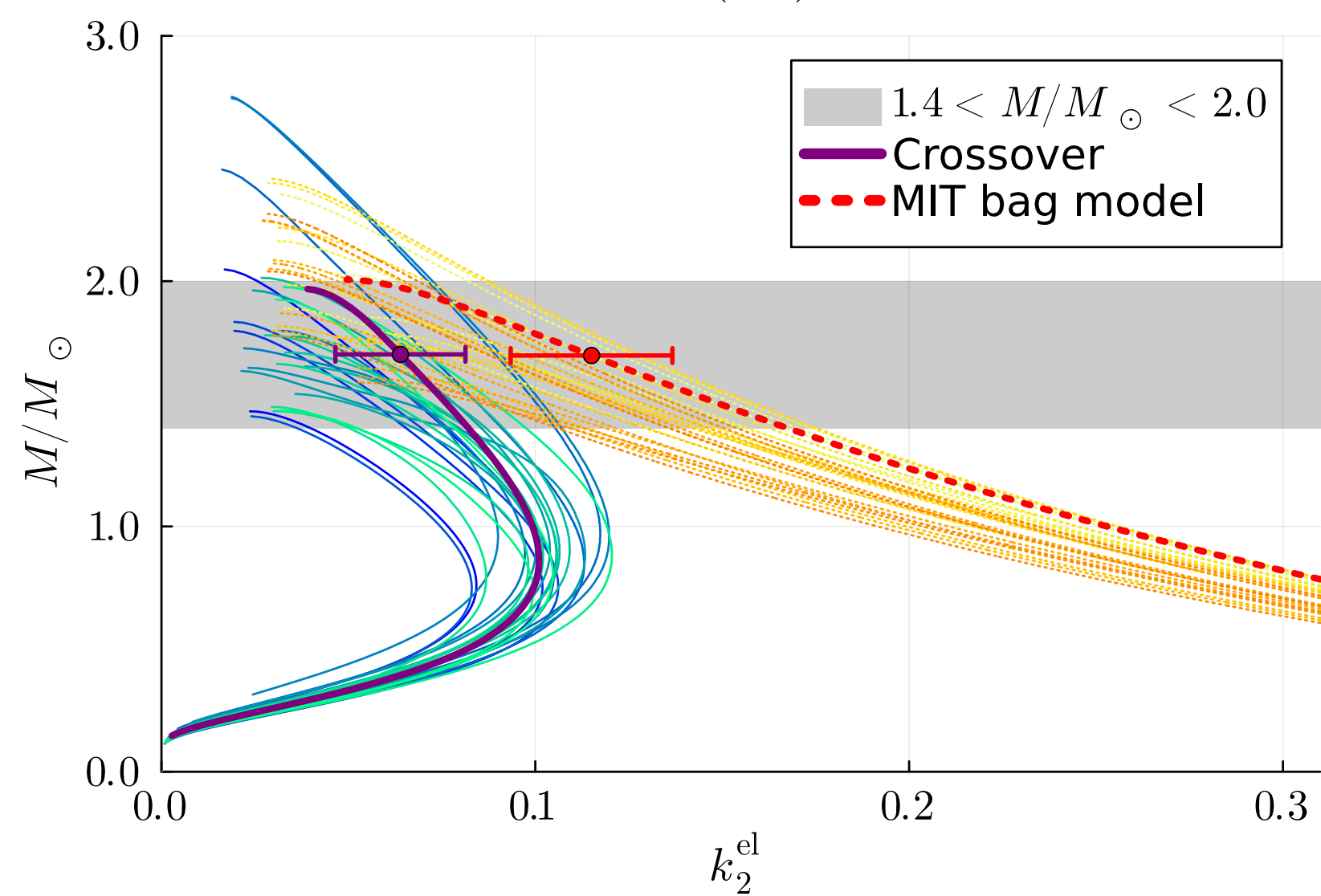
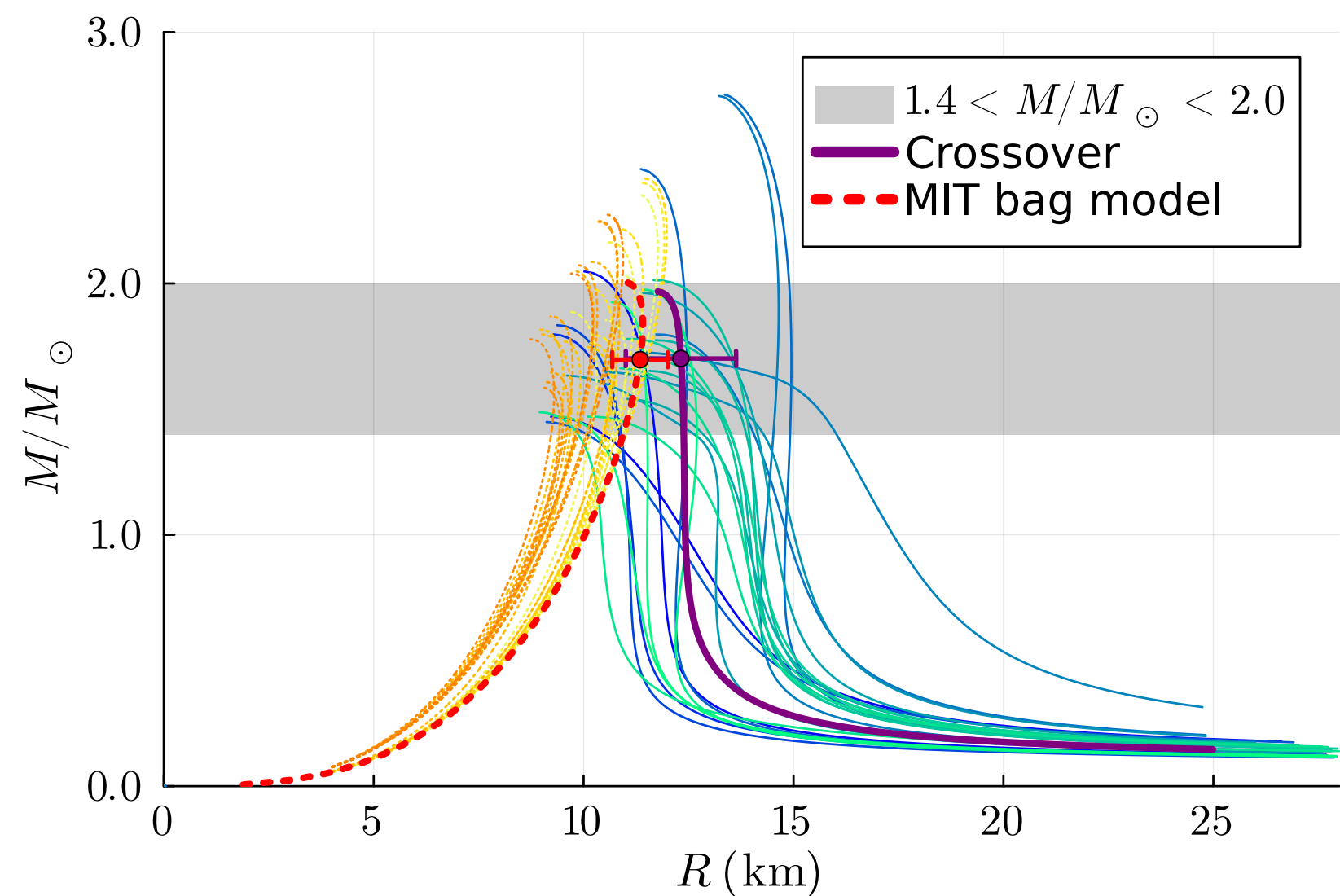


$$\text{Tidal deformability } \Lambda = \frac{2}{3} k_2^{\text{el}} \left(\frac{M}{R} \right)^{-5}$$

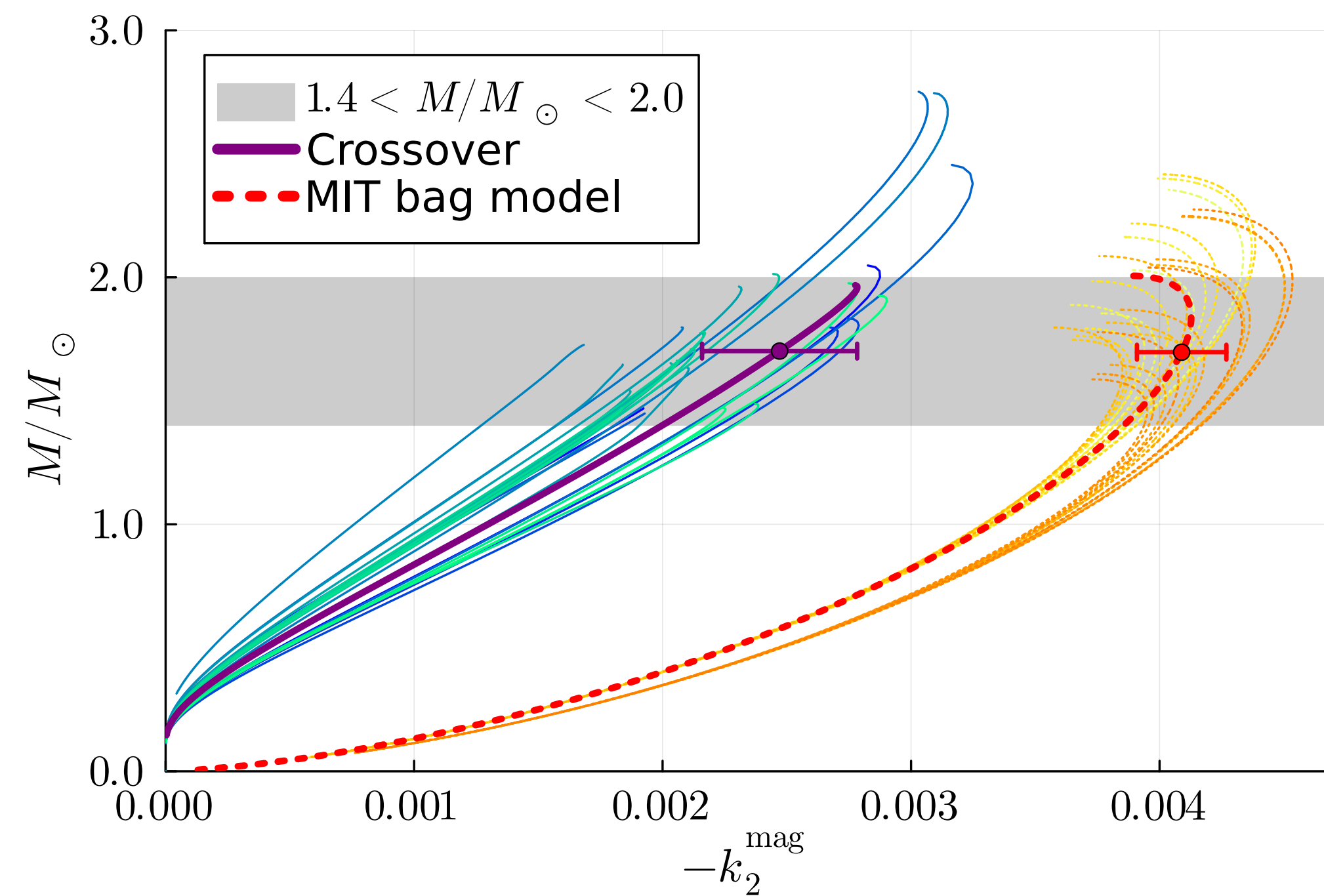


→ One needs to add additional information and constructs $(M, R, \textcircled{?})$ or $(M, \Lambda, \textcircled{?})$.

Distinguishing QSs from NSs by k_2^{mag}



Separated



→ QSs and NSs can be clearly distinguished.