

AFsample2: Making AF2 dance a bit wilder than in AFsample (MassiveFold)

**Wallner group
Björn Wallner**

Linköping University, Sweden

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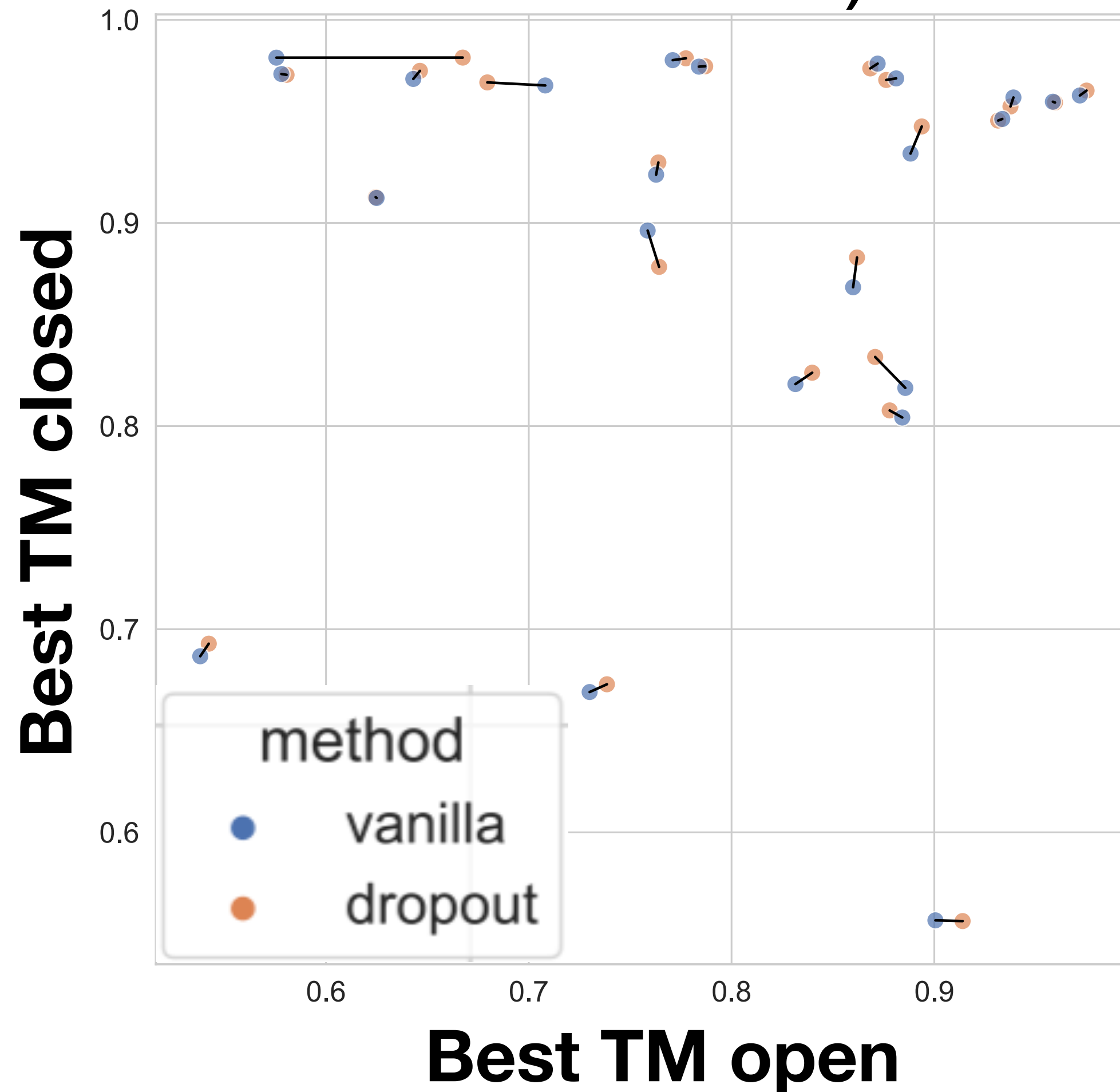


Yogesh Kalakoti



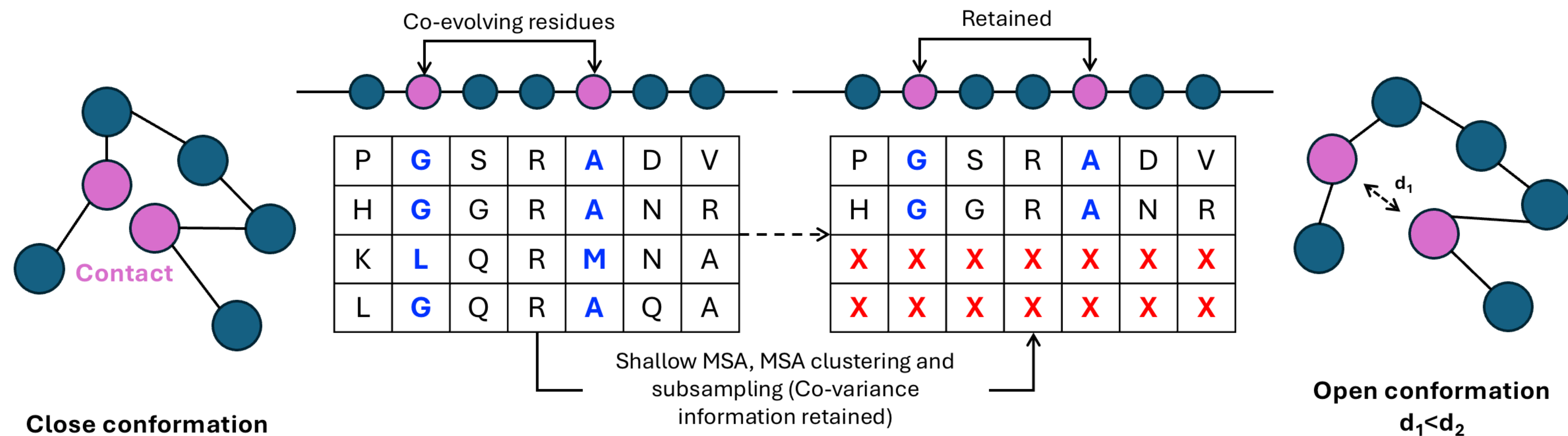
Predicting open-closed state against Vanilla AF2

AFsample (Wallner in
CASP15)

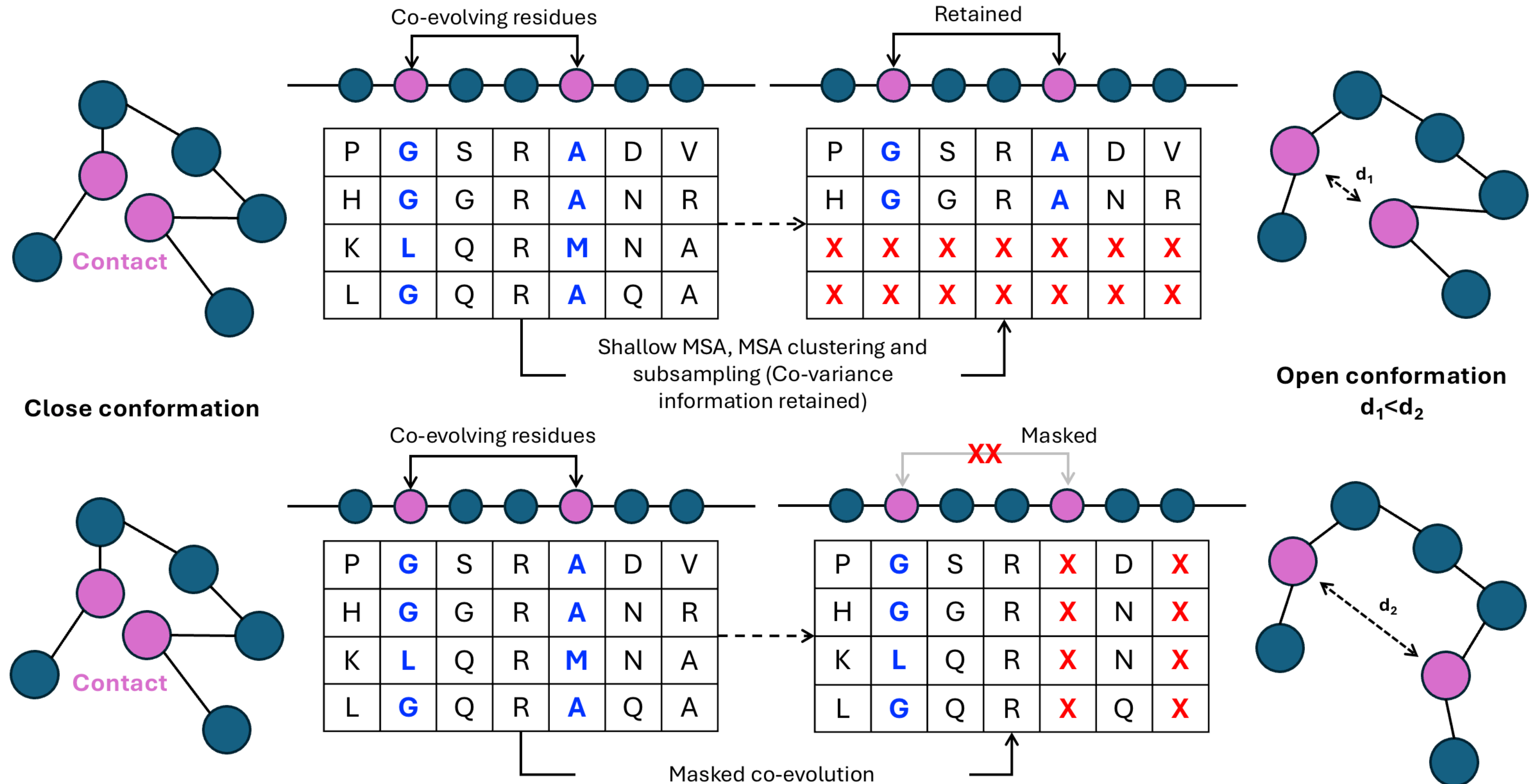


Improves but not much

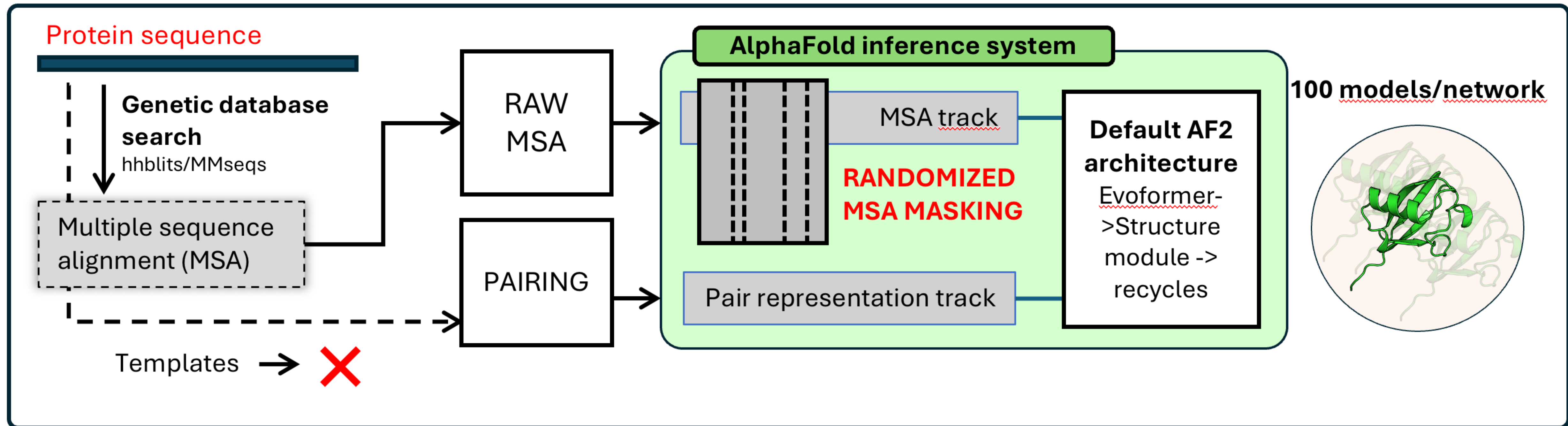
MSA subsampling



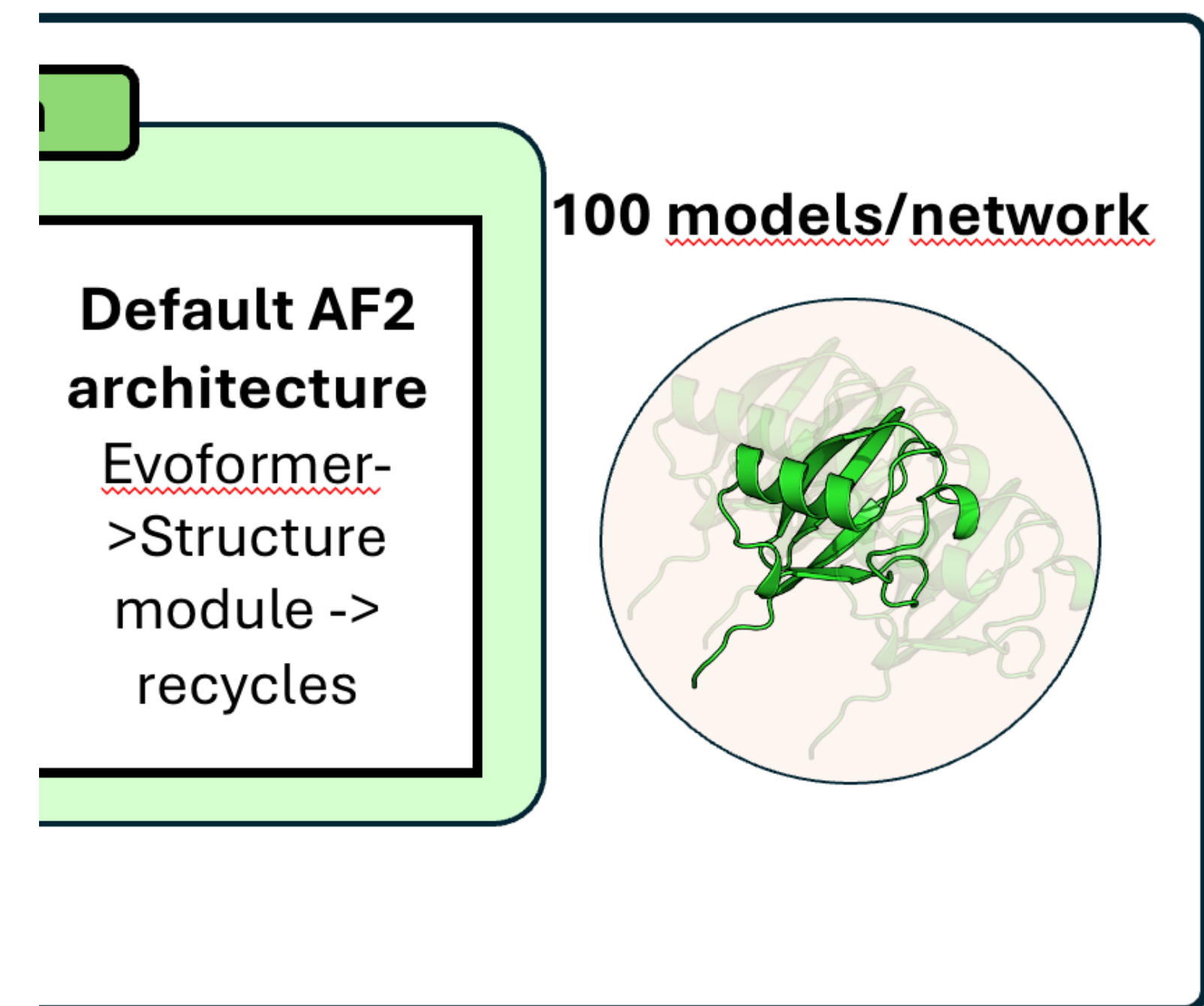
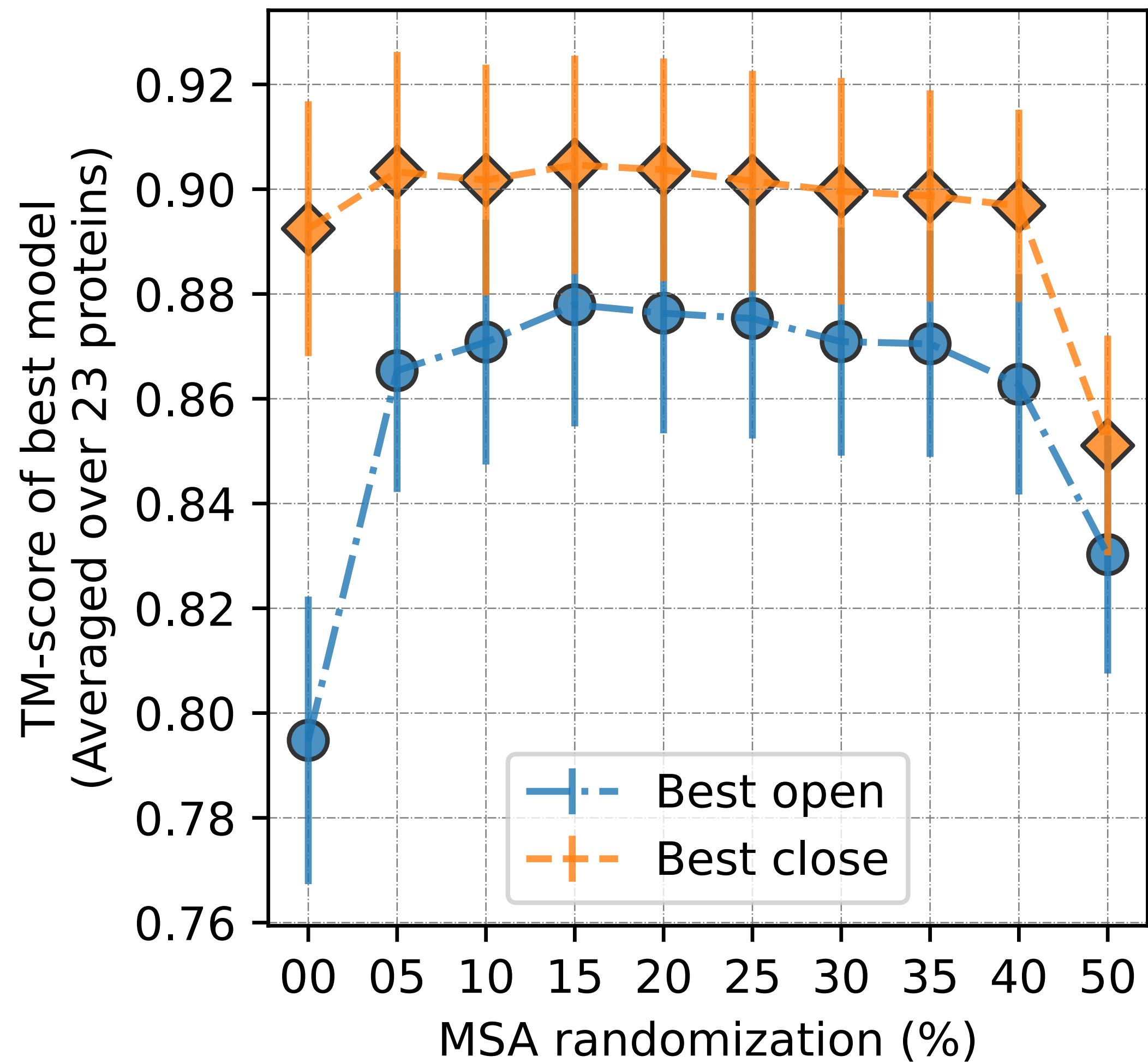
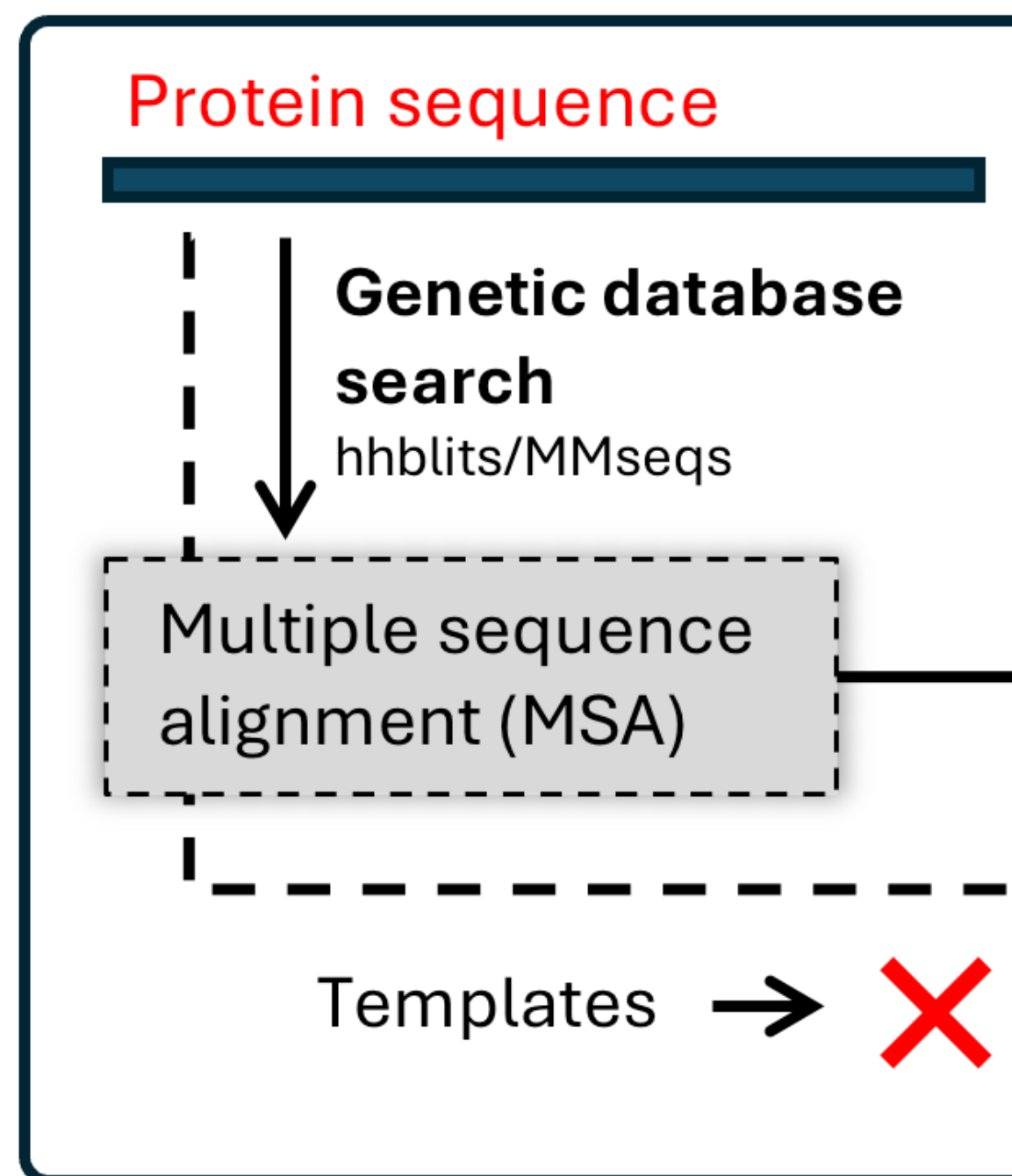
MSA subsampling



AFsample2: uses randomized column masking

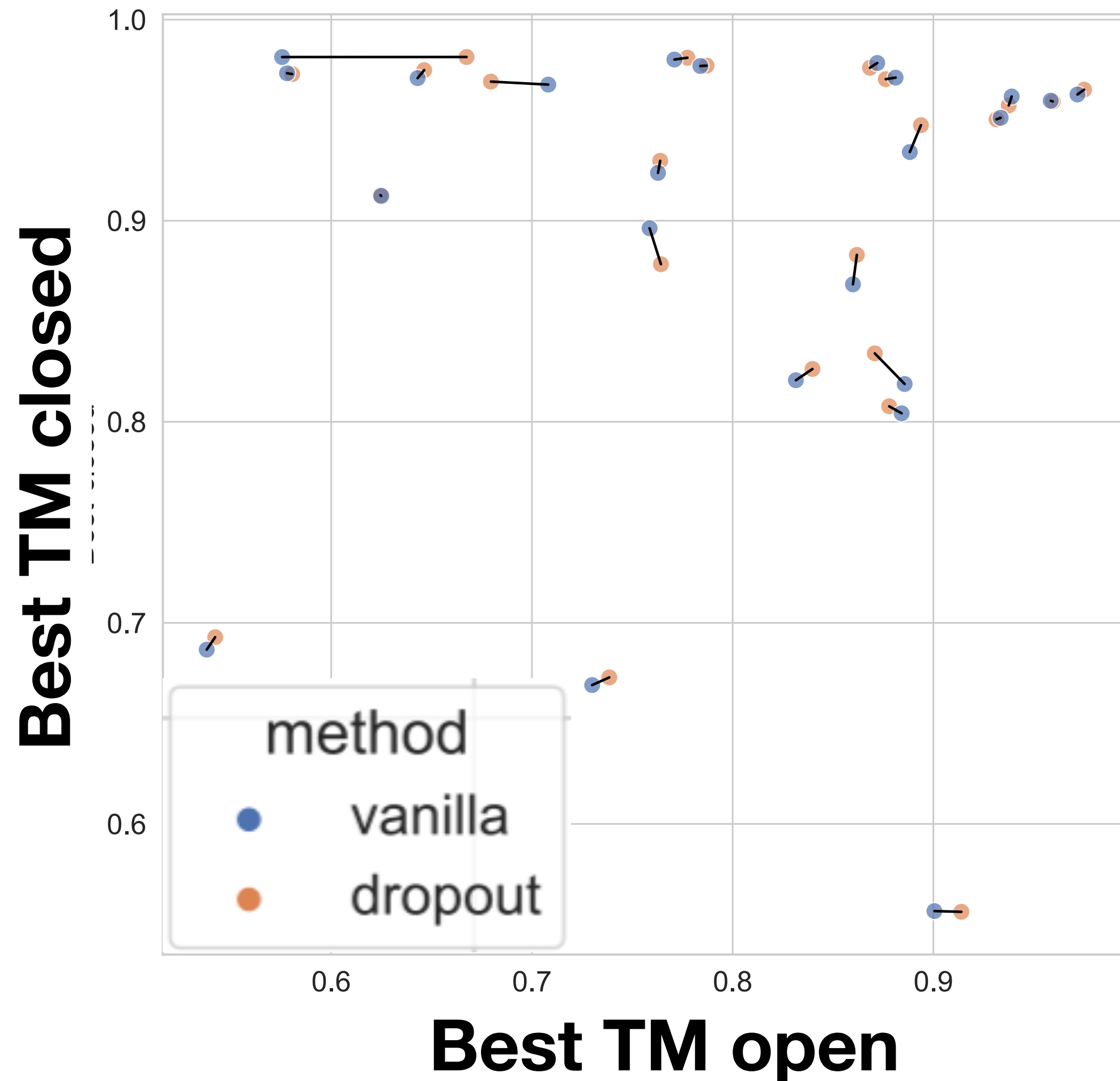


AFsample2: uses randomized column masking

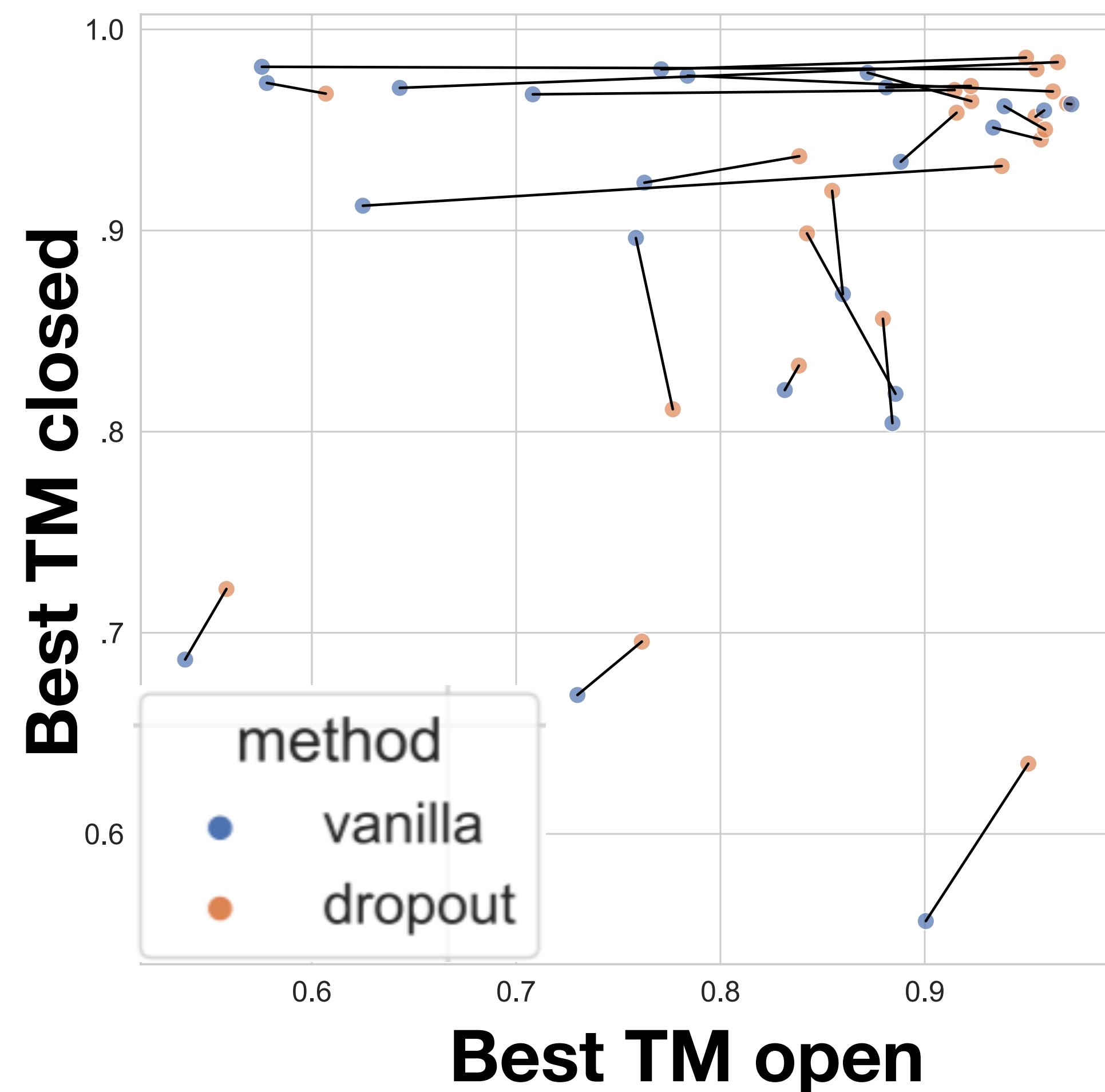


Predicting open-closed state against Vanilla AF2

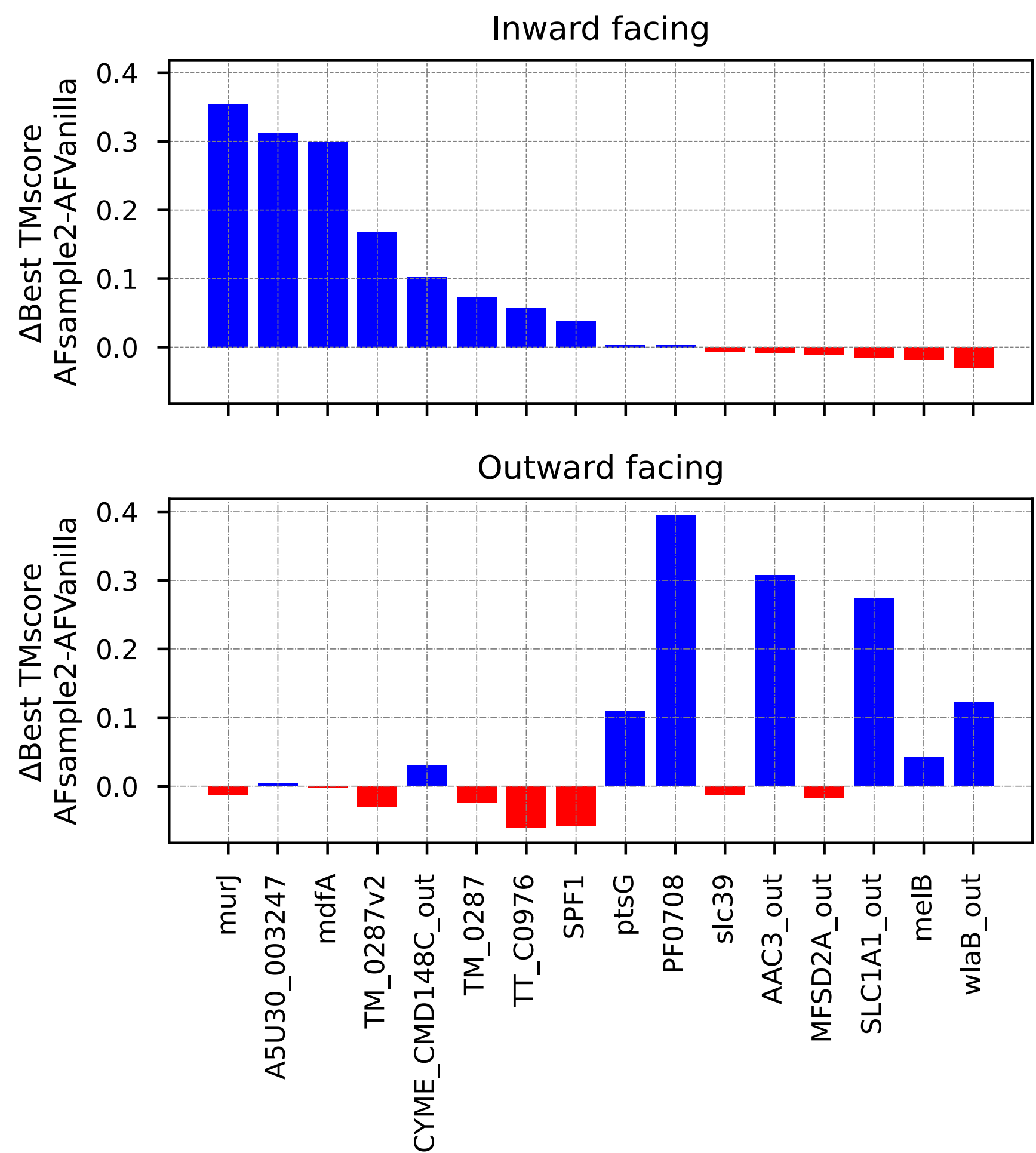
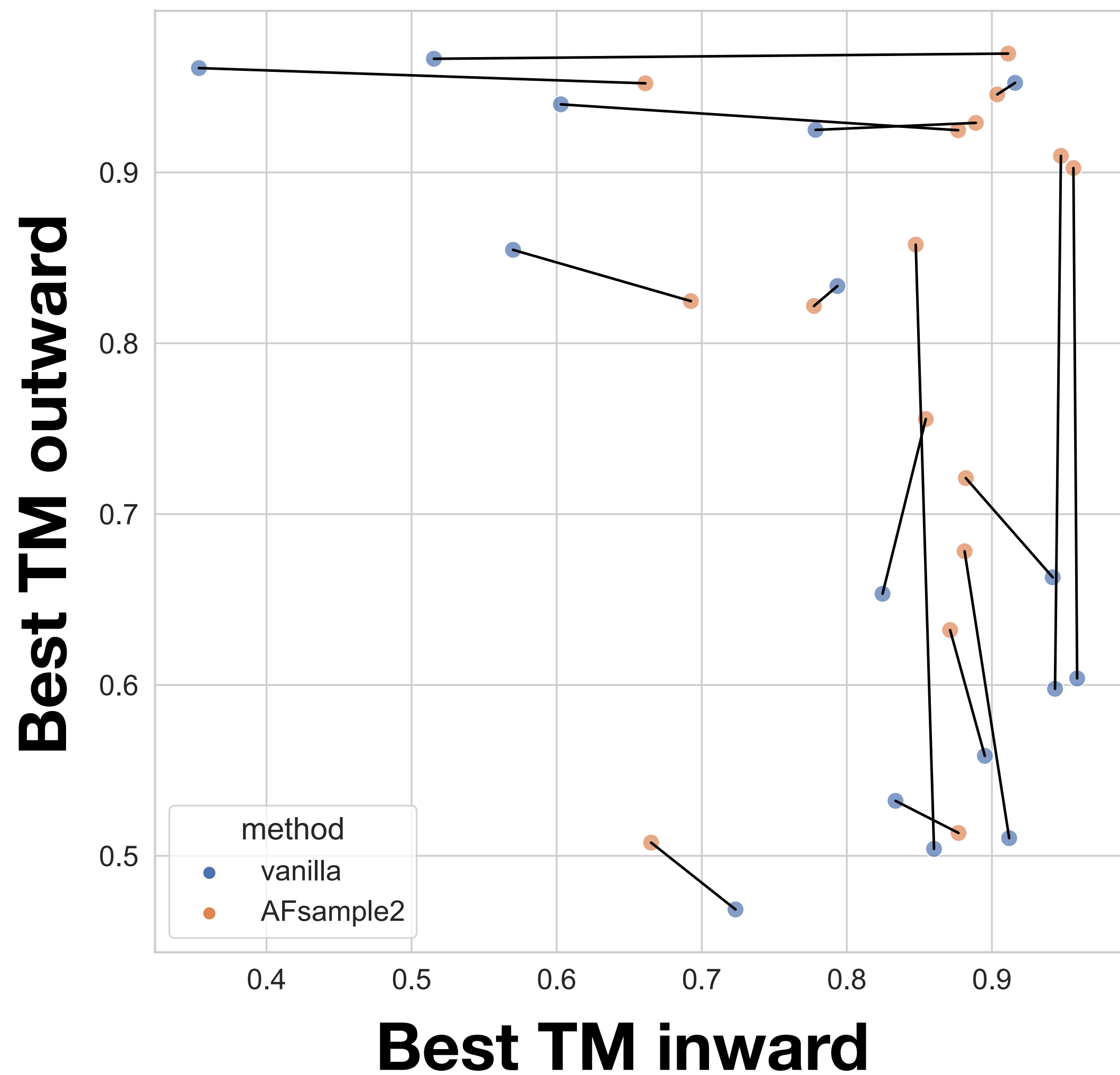
AFsample



AFsample2

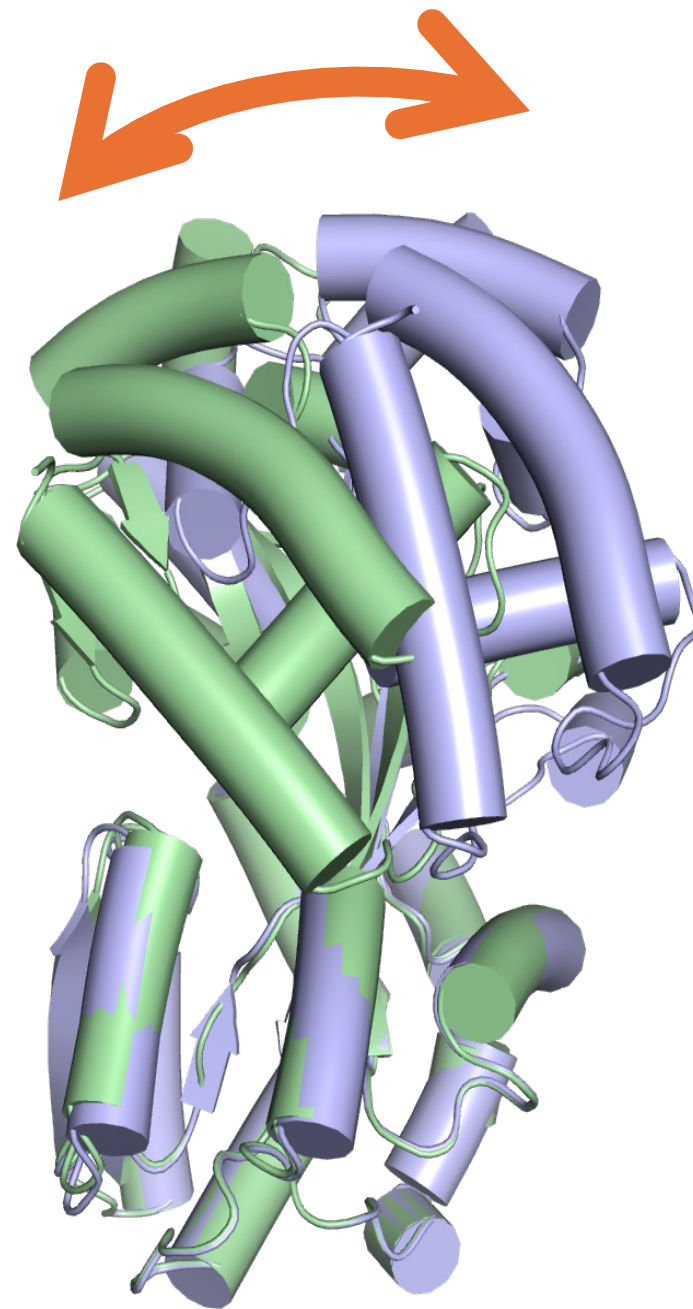


Testing on a set of 16 Membrane Transporters



AFsample2: Can also predict intermediate states

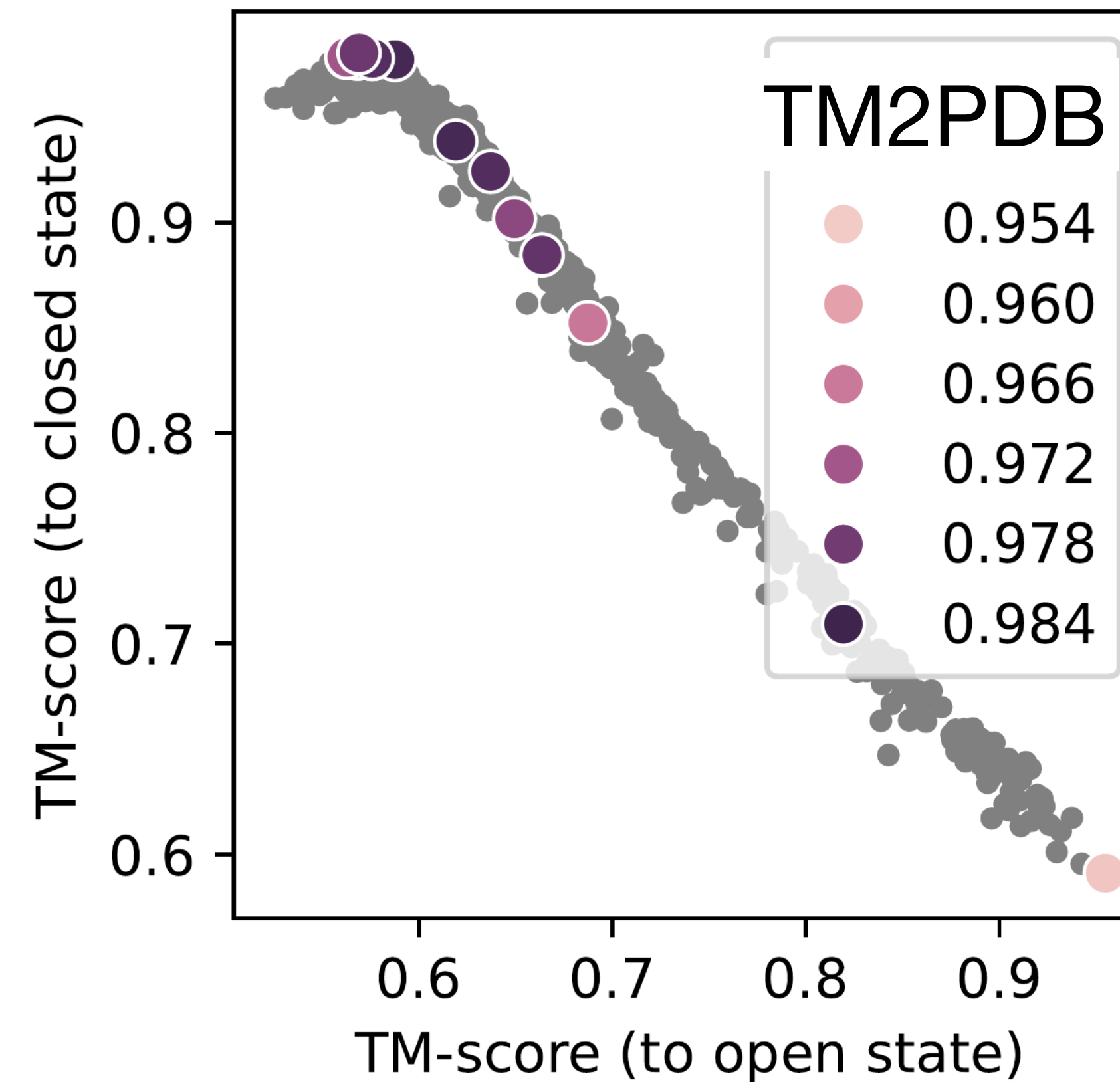
P31133



TM-best-open: **0.98**
TM-best-closed: **0.88**

Model ensemble mapped to PDB

P31133



Generating the ensemble

- 20,000 AFsample2 models
- MSA masking: [0,10%,20%,30%]
- Recycles: [3,10]
- Networks: [monomer, ptm, multimer_v1,v2,v3]
- 500 models per setting
 $4 \times 2 \times 5 \times 500 = 20,000$ models
- Cluster - Weight on cluster size

The ensembles...

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- MSA masking: [0,10%,20%,30%]
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- 500 models per setting
 $4 \times 2 \times 5 \times 500 = 20,000$ models
- Cluster - Weight on cluster size

T1200 - top 5

T1200TS465_1	0.26	0.05
T1200TS465_2	0.13	0.05
T1200TS465_3	0.10	0.05
T1200TS465_4	0.08	0.05
T1200TS465_5	0.08	0.05

T1300 - top 5

T1300TS465_1	0.15	0.05
T1300TS465_2	0.14	0.05
T1300TS465_3	0.12	0.05
T1300TS465_4	0.10	0.05
T1300TS465_5	0.07	0.05

