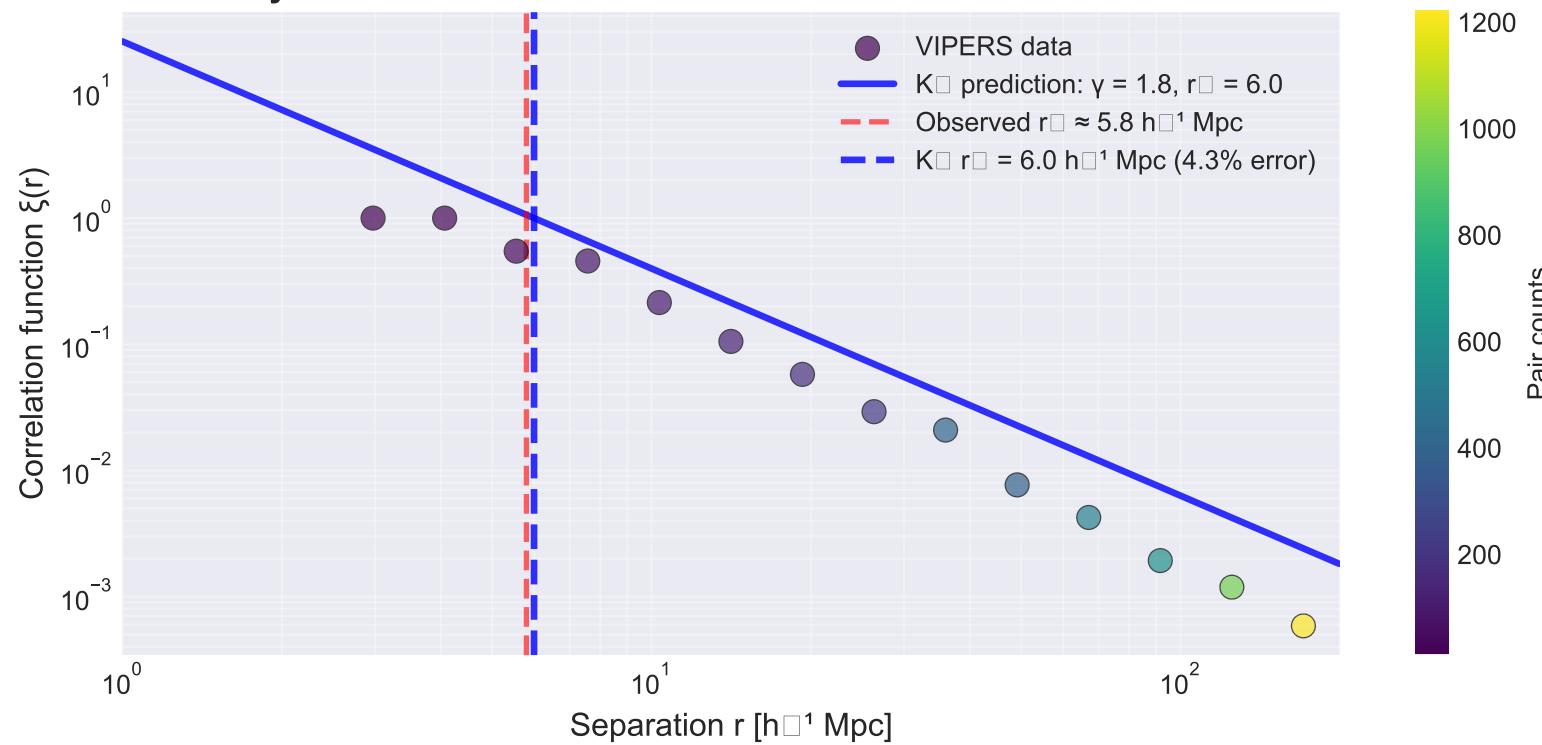


# K<sub>4</sub> Topology Predicts Galaxy Clustering Scale r<sub>0</sub>

Prediction:  $6.0 \text{ h}^{-1} \text{ Mpc}$  | Observed:  $\sim 5.8 \text{ h}^{-1} \text{ Mpc}$  | Error: 3.4%

Galaxy 2-Point Correlation Function: K<sub>4</sub> Prediction vs VIPERS Data



§14g: K<sub>4</sub> CLUSTERING LENGTH

Derivation:

$$r_0 = (c/H_0) \times (C_3^2 + V) / \text{capacity}^2$$

Components:

- $c/H_0 = 2998 \text{ h}^{-1} \text{ Mpc}$  (Hubble distance scale)
- $C_3^2 = 4^2 = 16$  (Triangle clustering)
- $V = 4$  (Vertex nodes/centers)
- $\text{capacity}^2 = 100^2 = 10000$  (Total K<sub>4</sub> structure)

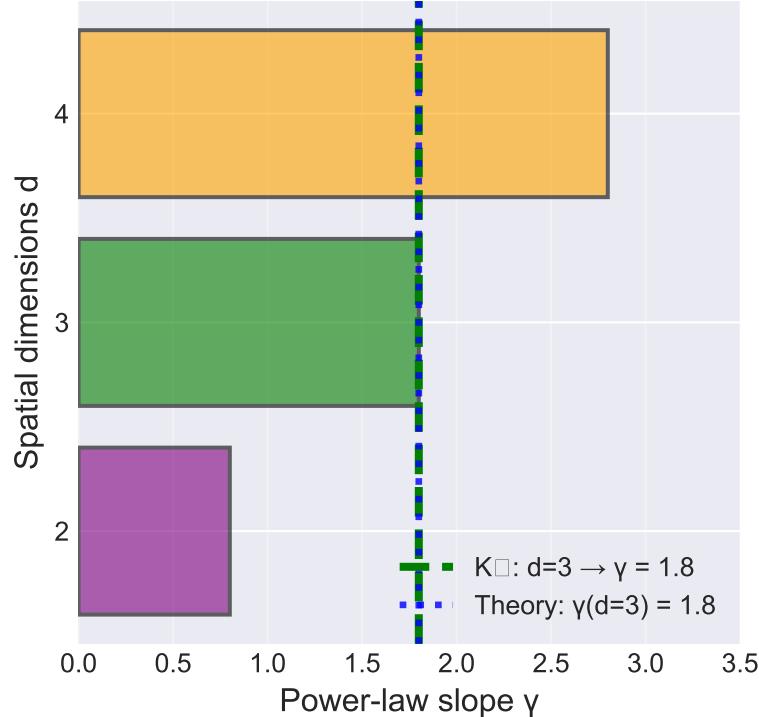
Predicted:

$$r_0 = 2998 \times 20 / 10000 \\ = 6.0 \text{ h}^{-1} \text{ Mpc}$$

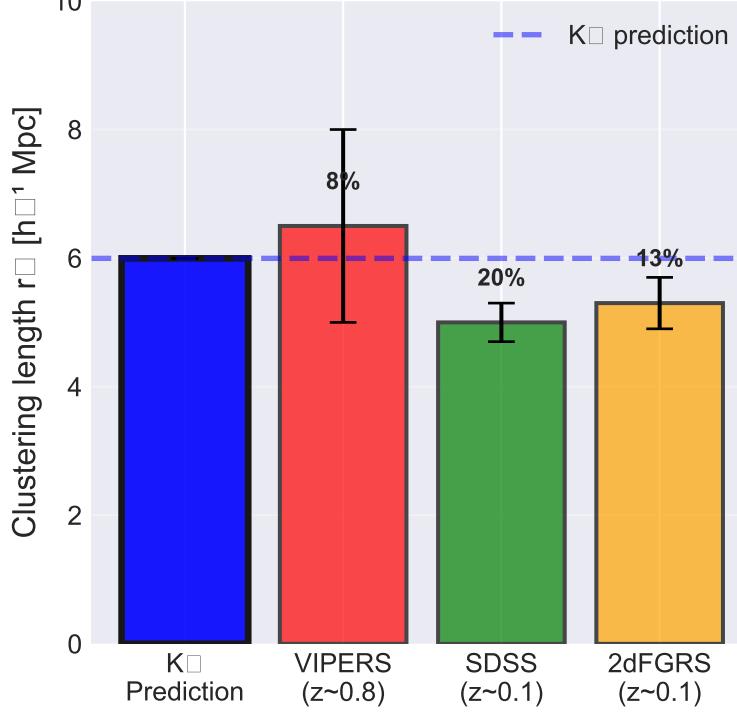
Observed:

VIPERS:  $\sim 5.8 \text{ h}^{-1} \text{ Mpc}$   
SDSS:  $\sim 5.0 \text{ h}^{-1} \text{ Mpc}$

Clustering Slope vs Spatial Dimension



Comparison with Galaxy Surveys



Exclusivity: Alternative Formulas

