

PERSIST Analysis Report

Tissue Type: breast_cancer
Run Date: 2026-01-22 21:54

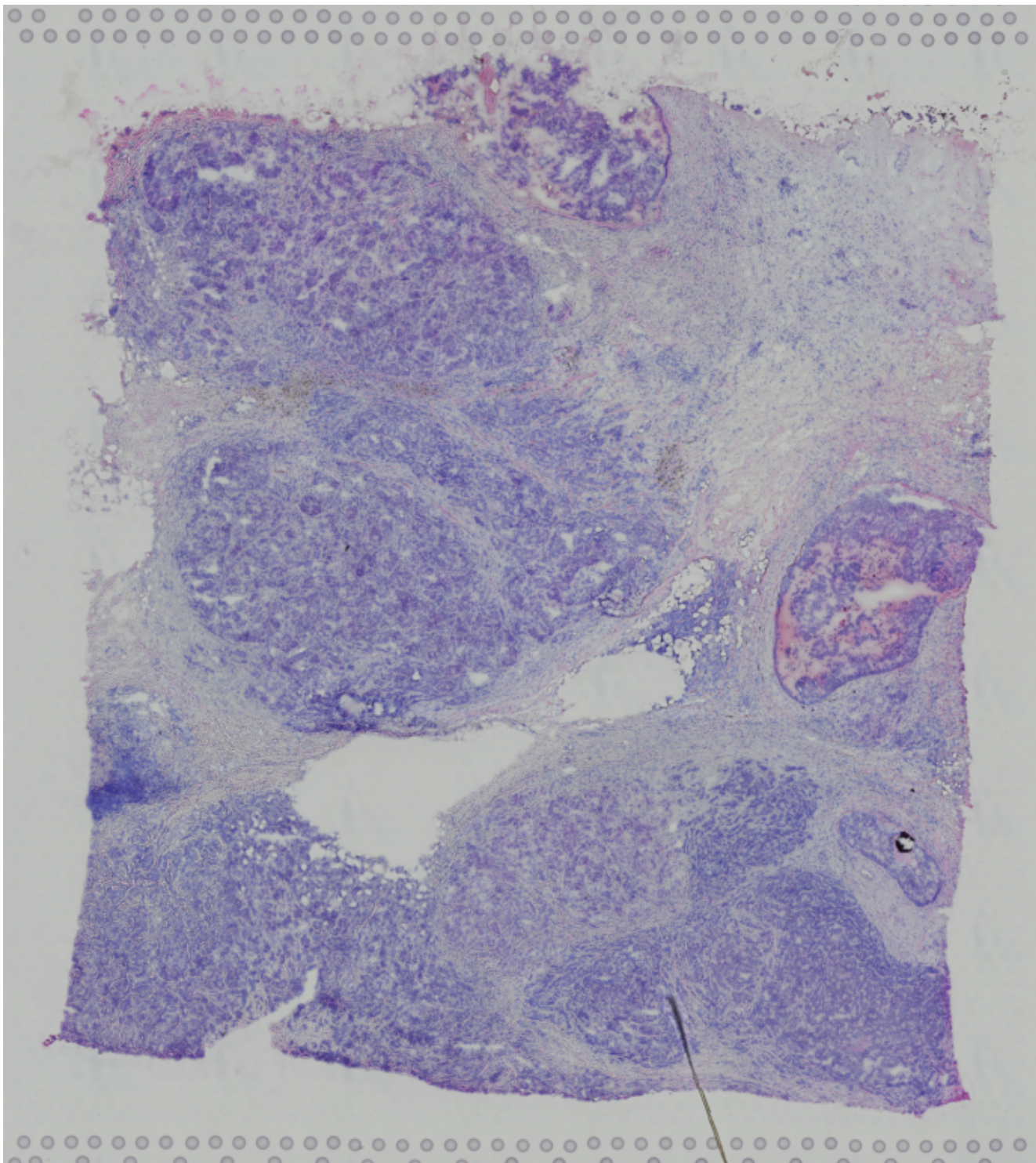
Metrics Summary:

- Scale Local Coherence (SLC): 0.9996 (>0.9 = Robust)
- Orthogonality (TOI): 0.8651
- Baseline ARI: 0.4255

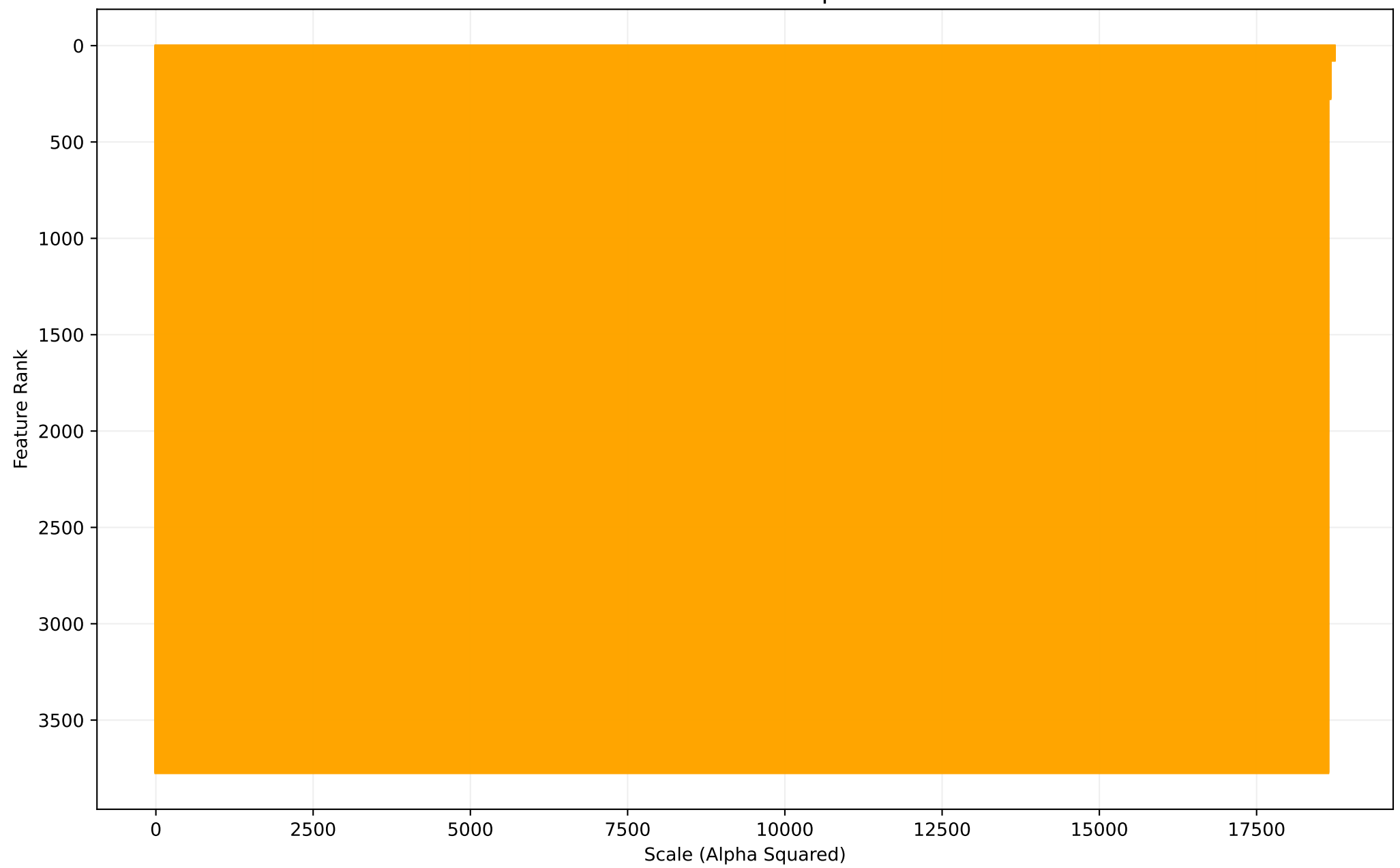
Topology Statistics:

- H1 Features (Loops): 7199
- Significant Cores: 1313
- Mean Stability: 0.616

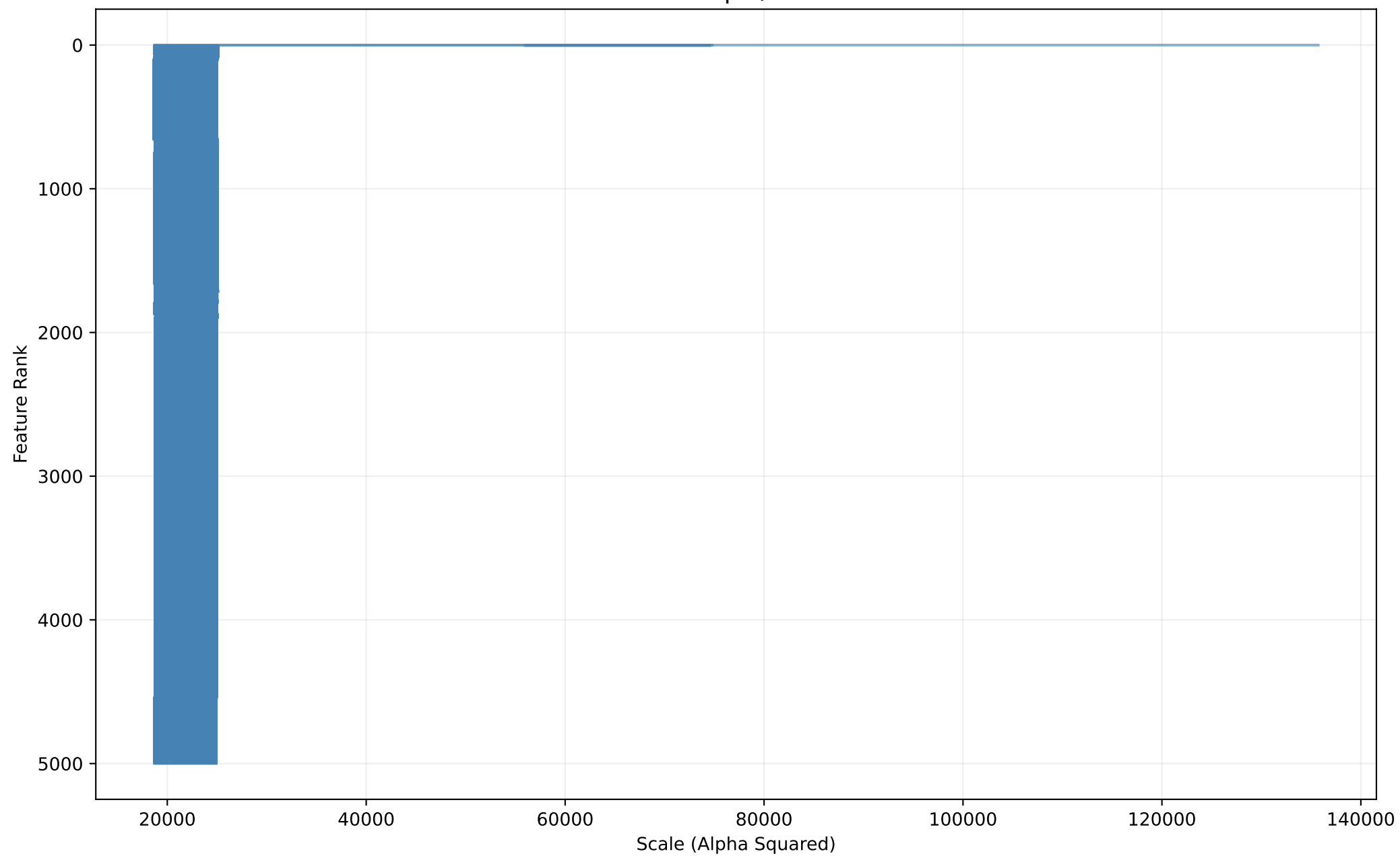
H&E Histology



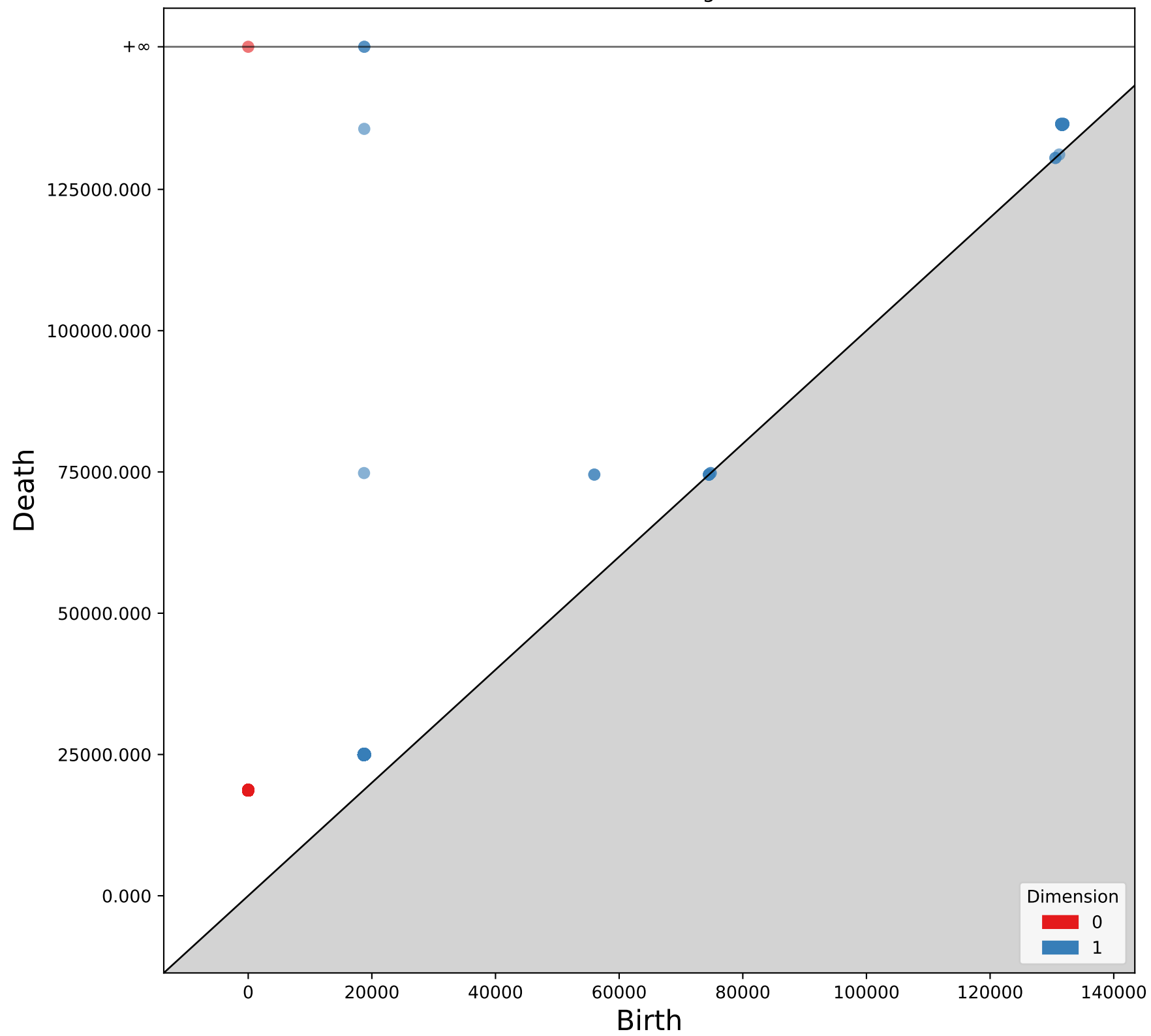
H0: Connected Components



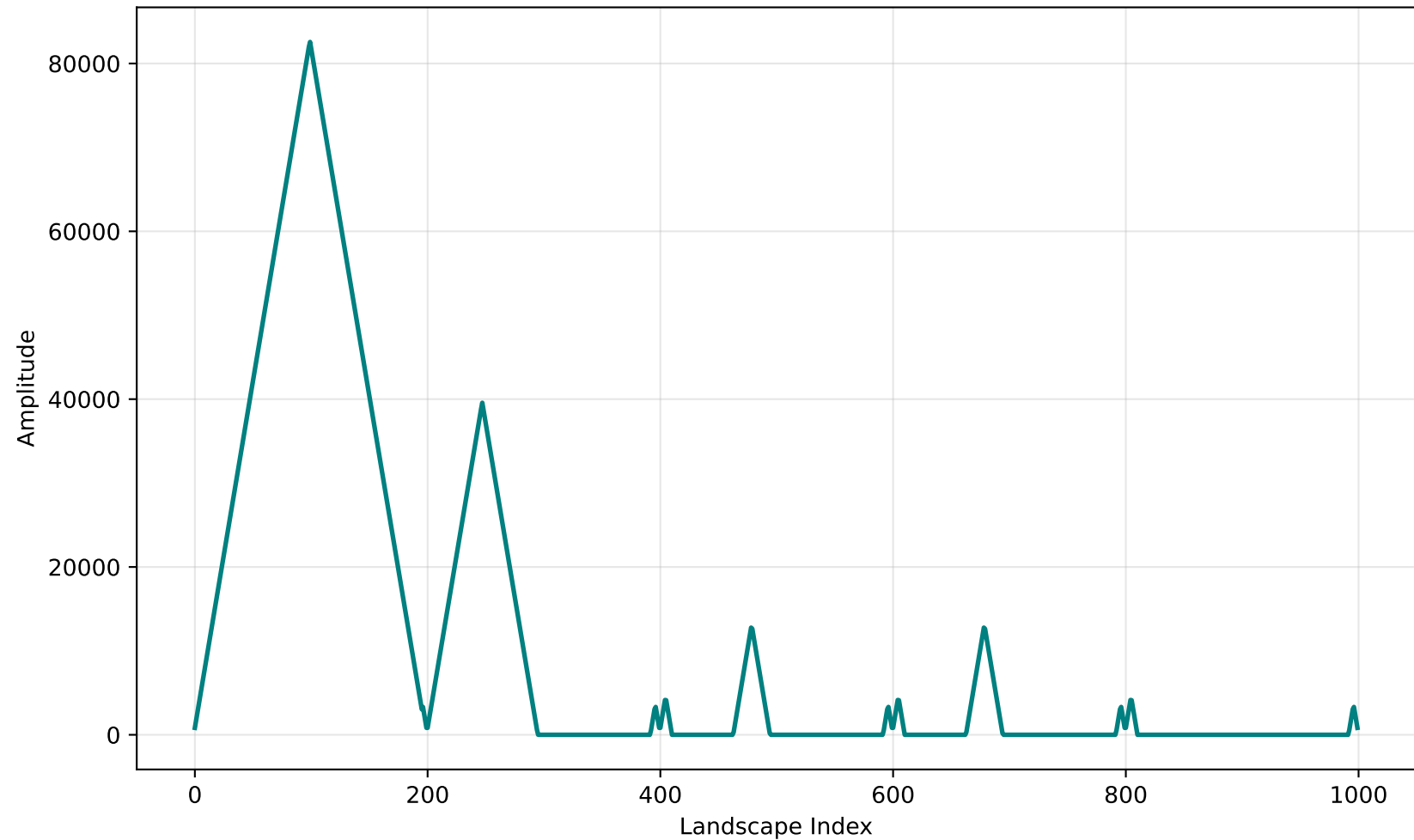
H1: Loops / Voids



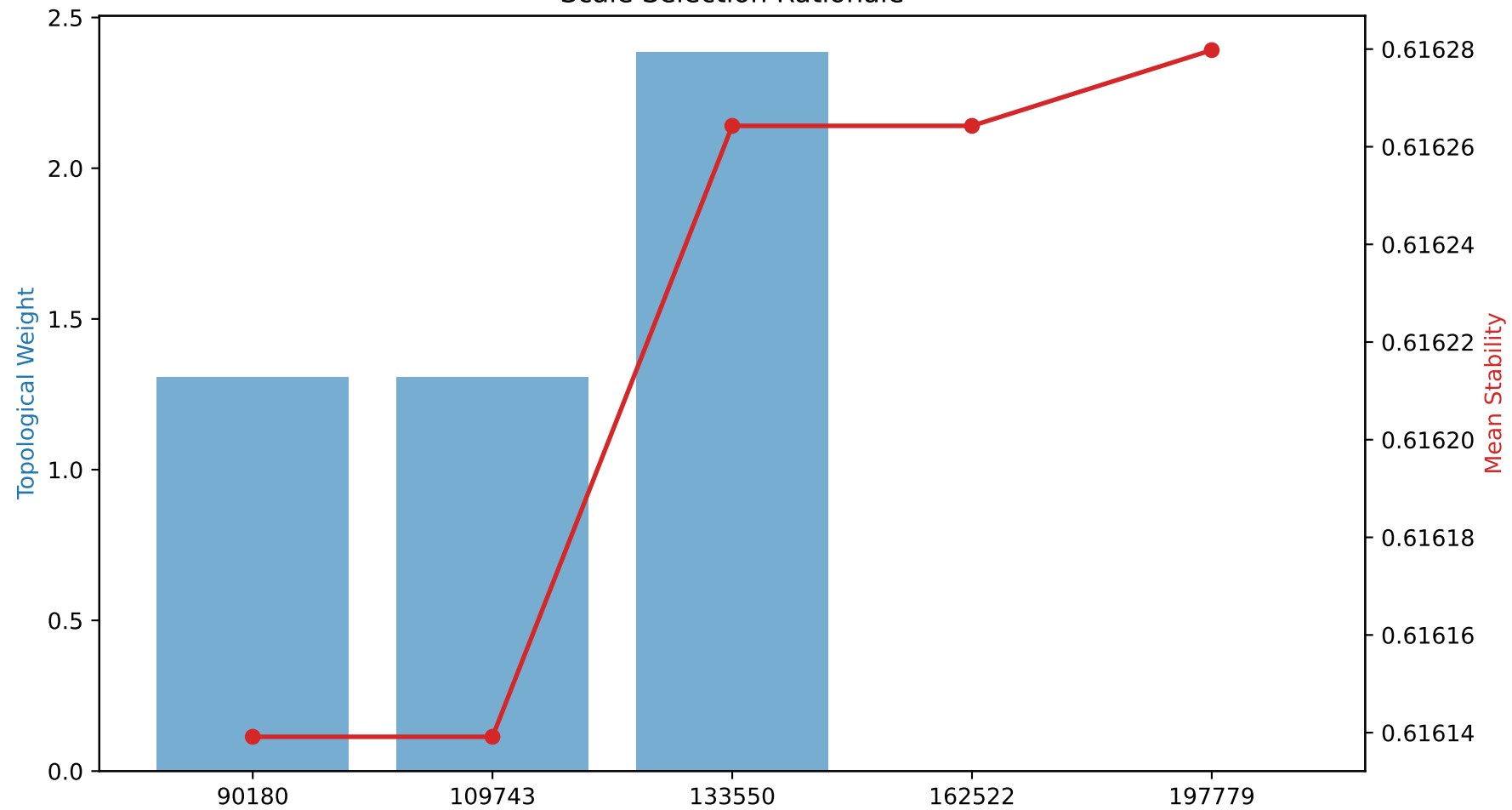
Persistence Diagram



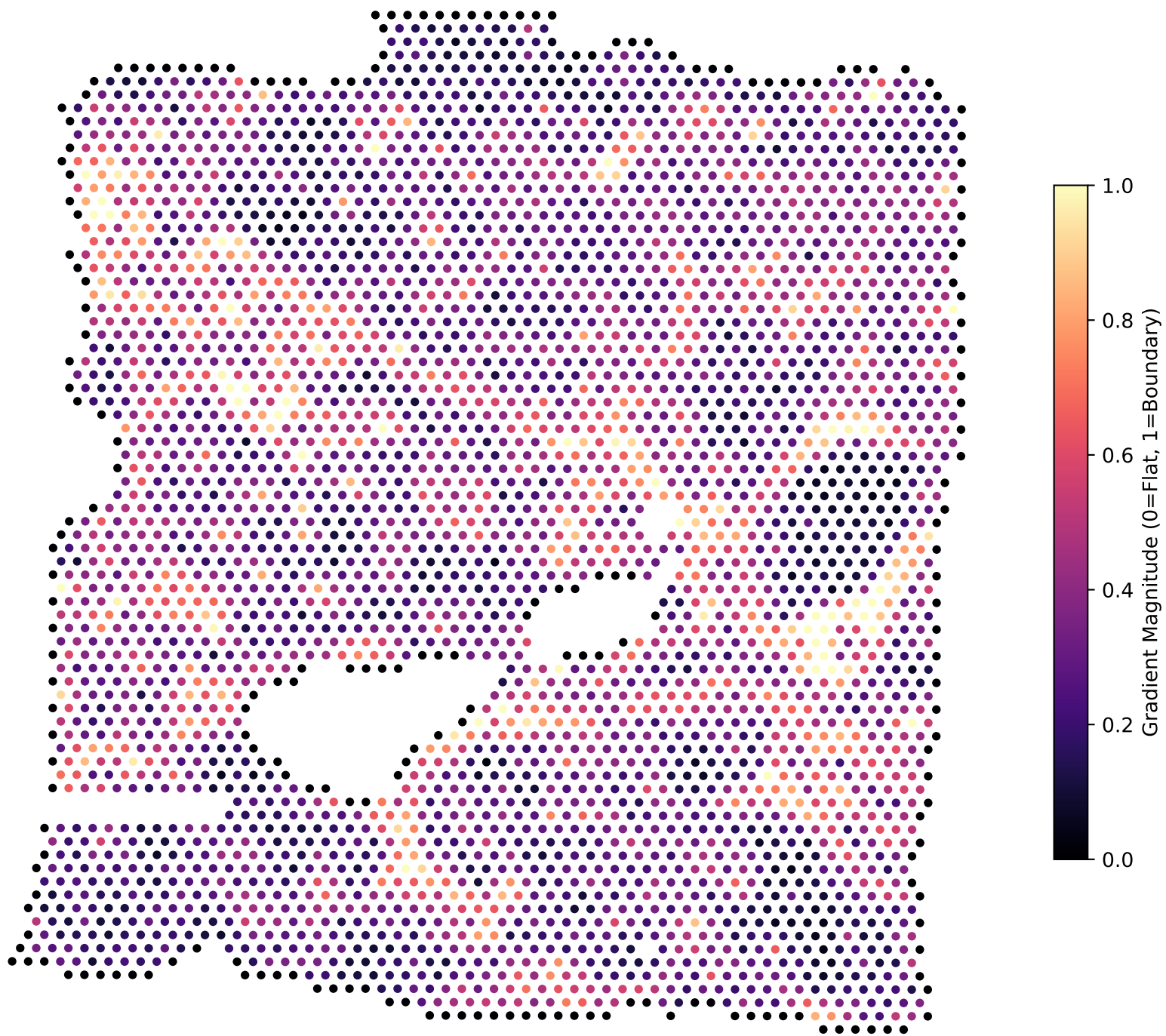
Topological Landscape Signature



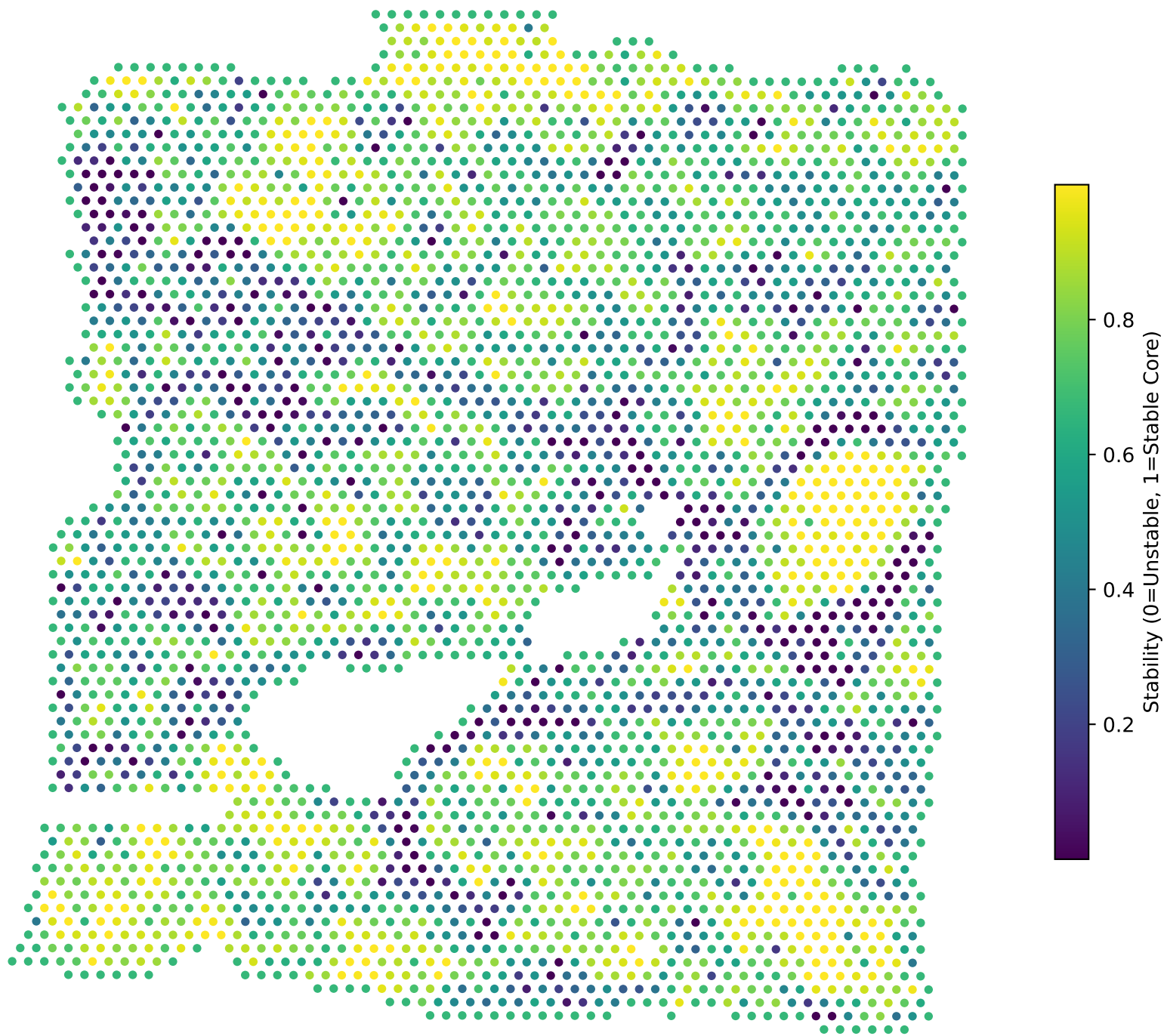
Scale Selection Rationale



Topological Walls (Frontiers)



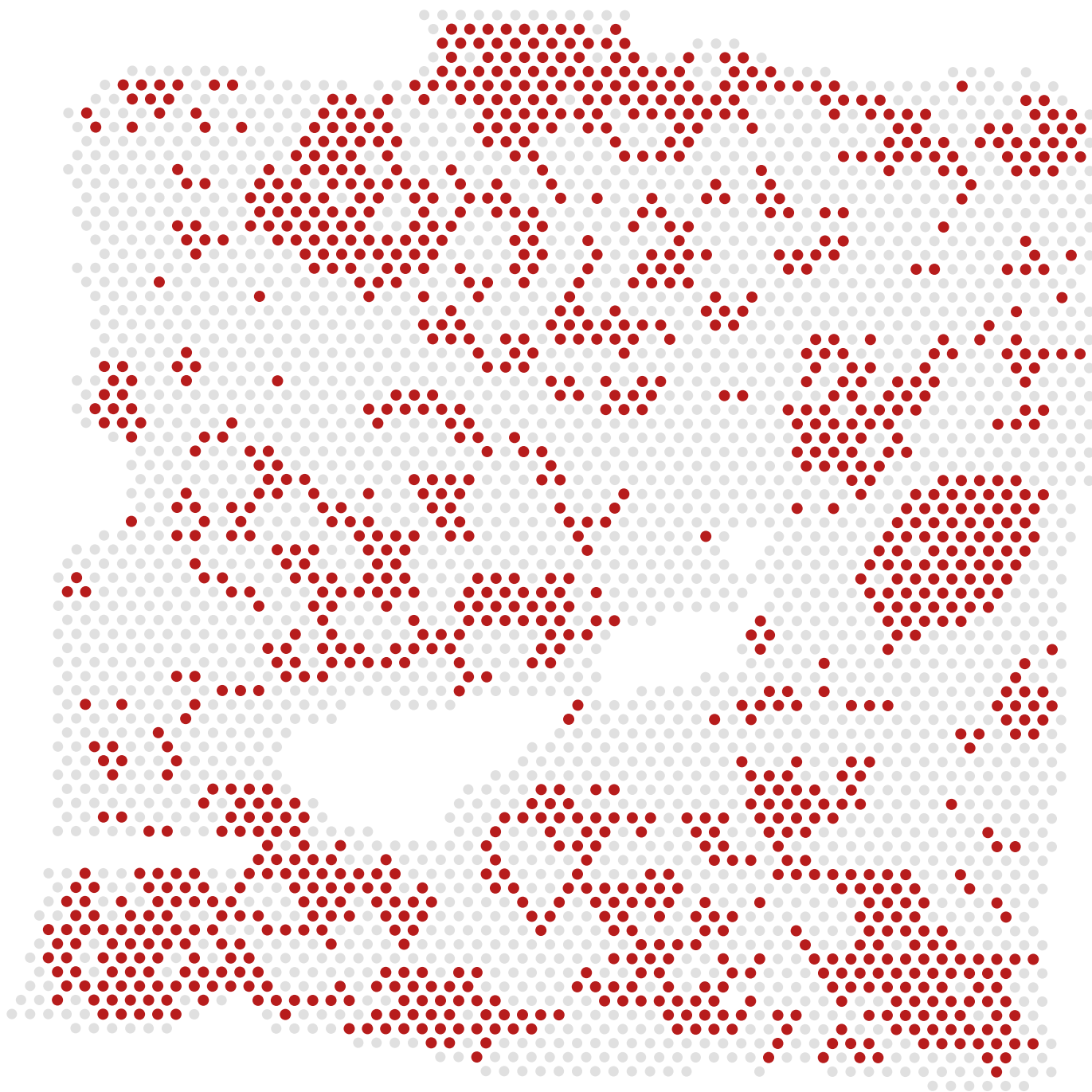
Stability Landscape (Energy)



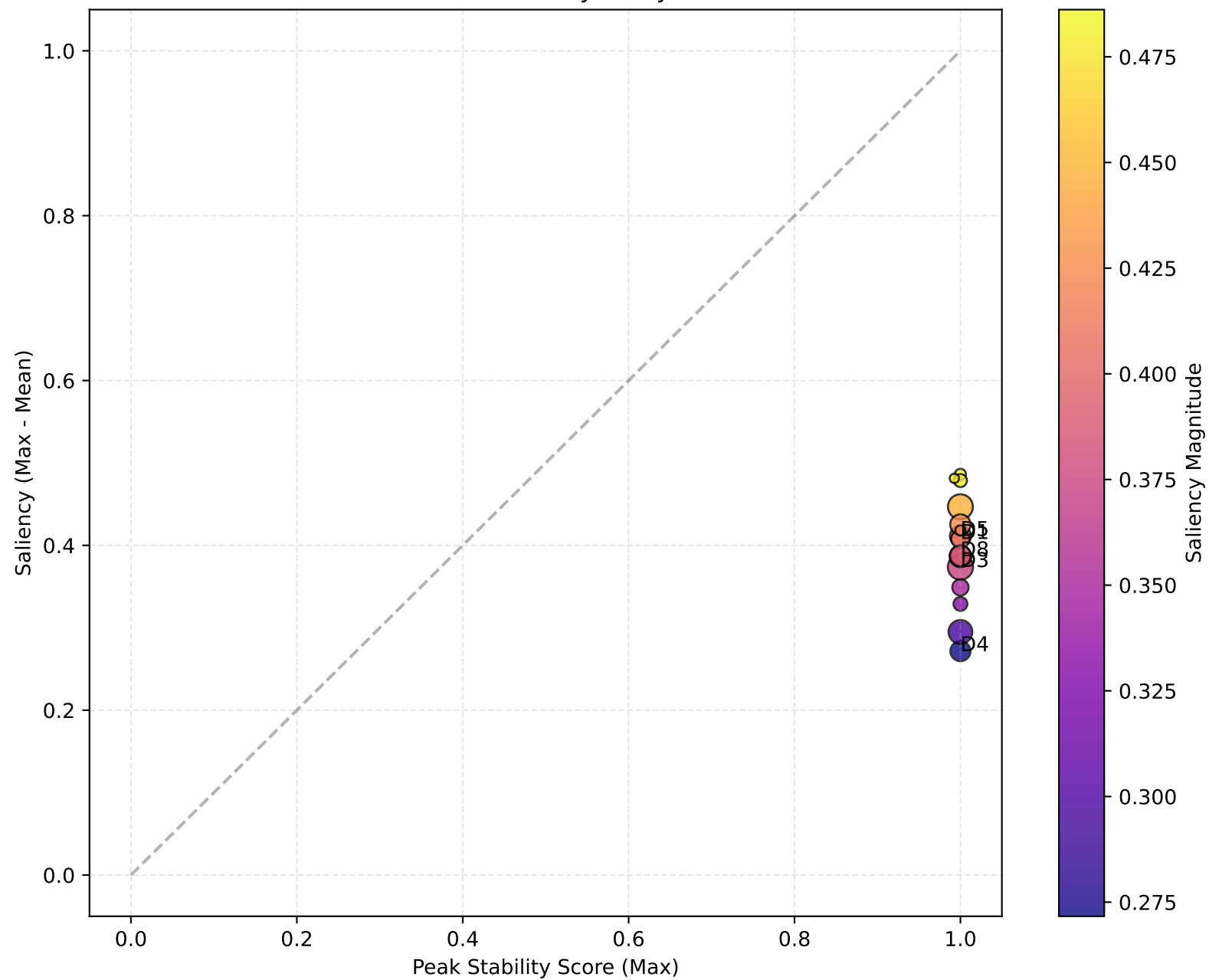
Basin Decomposition (Red = Walls)



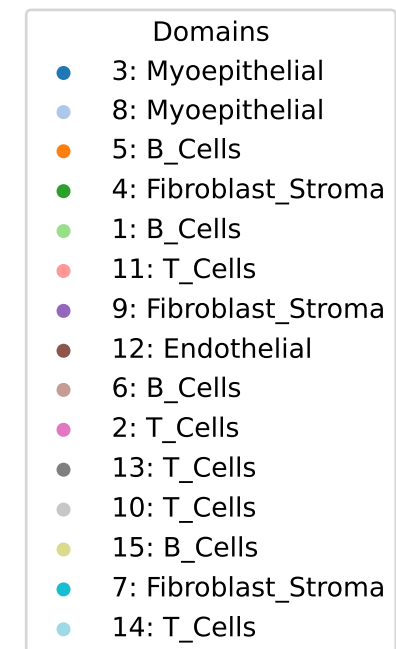
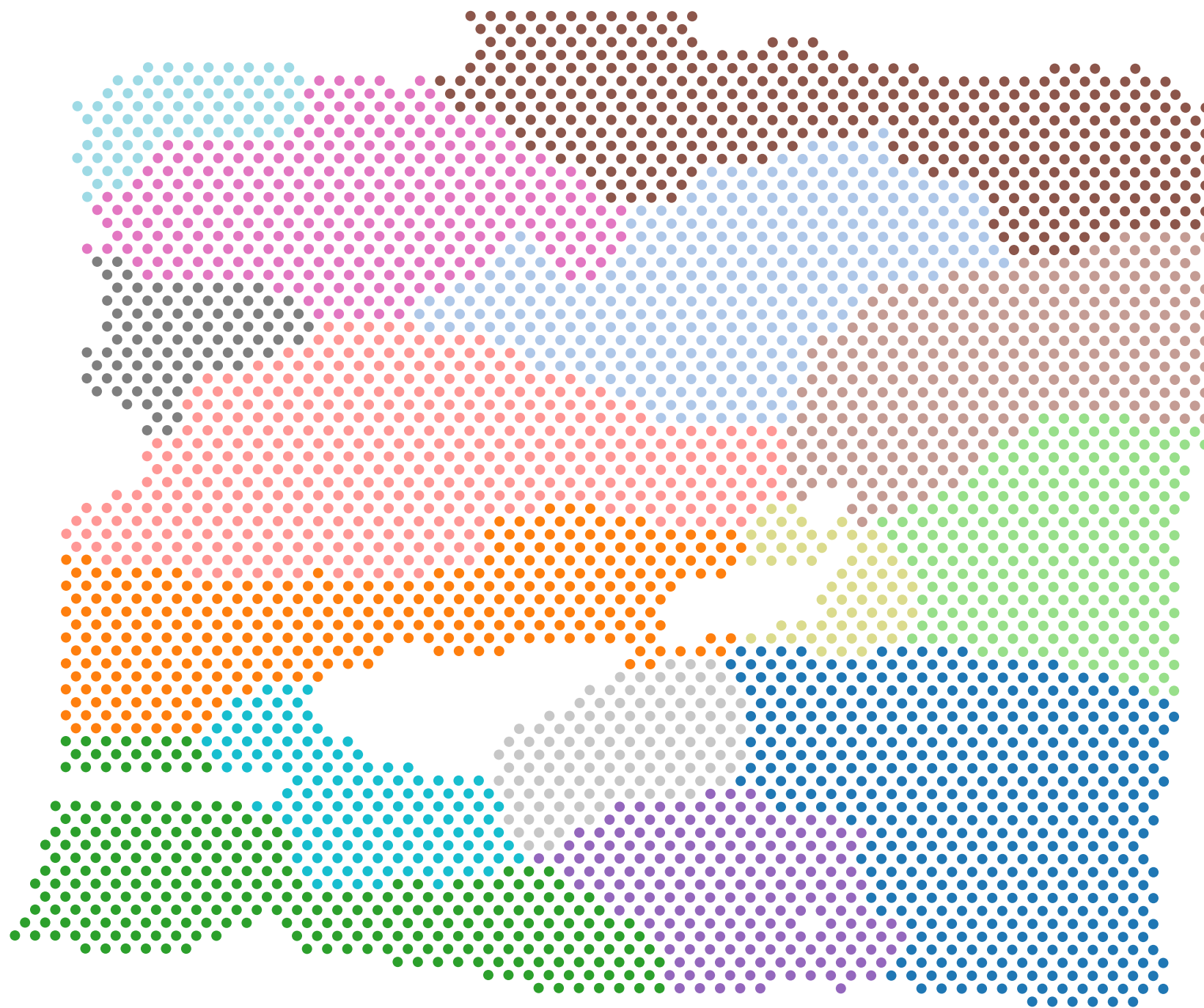
Robust Stability Cores (1313 spots)



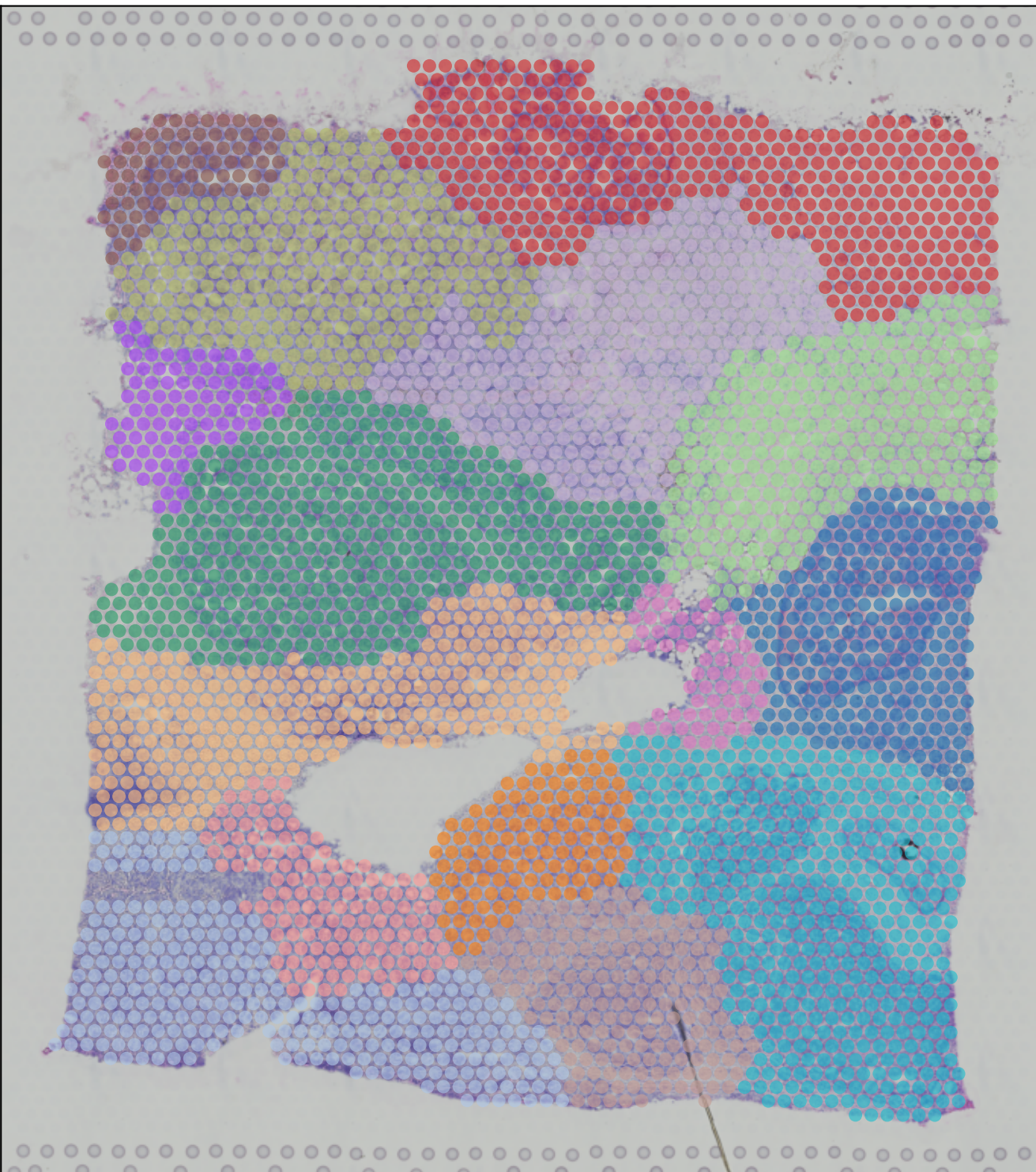
Domain Saliency Analysis



Final Topological Domains (Solid Map)

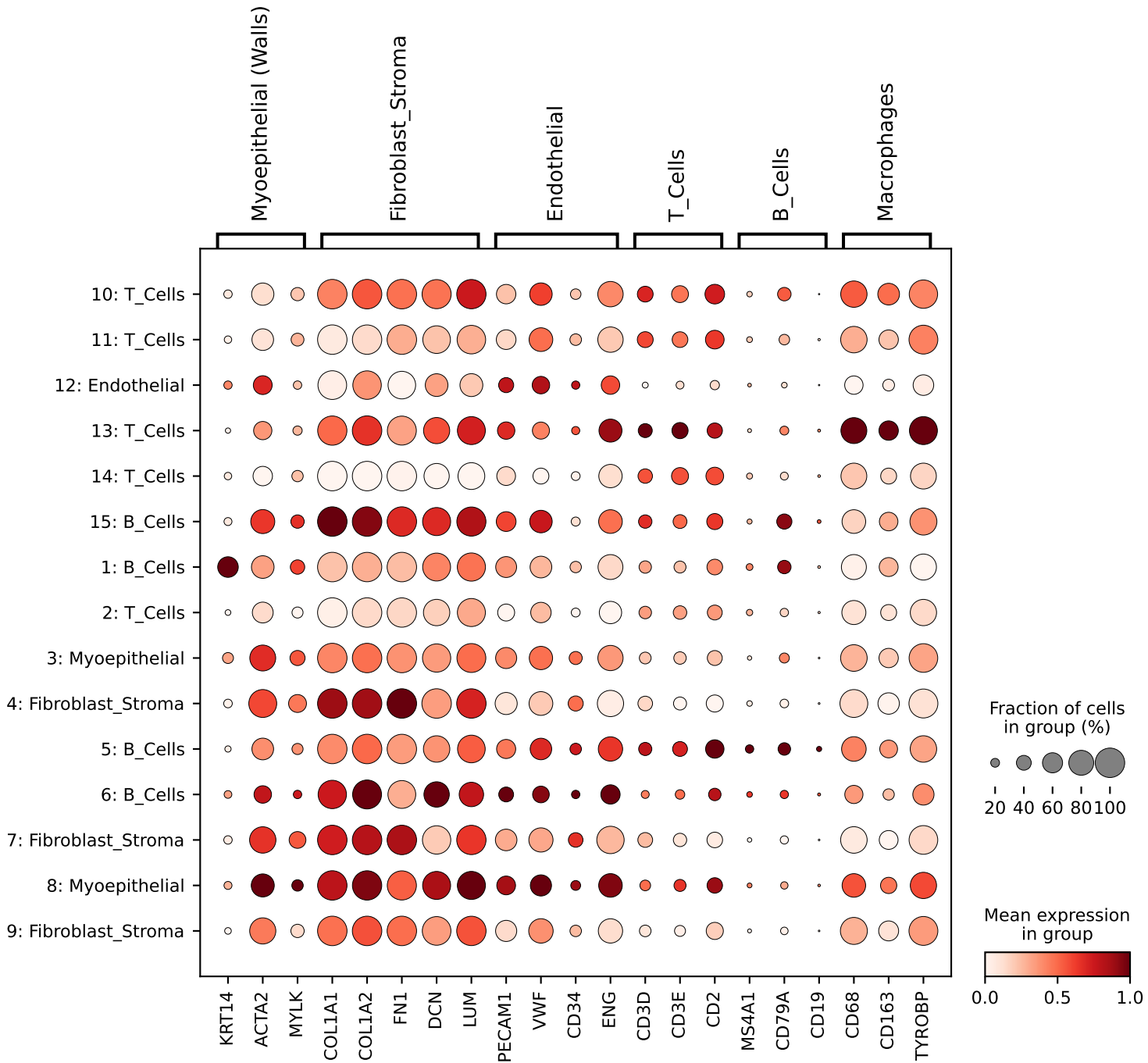


Domain Overlay on Histology



- | | |
|-----------------|----------------------|
| 1: B_Cells | 3: Myoepithelial |
| 10: T_Cells | 4: Fibroblast_Stroma |
| 11: T_Cells | 5: B_Cells |
| 12: Endothelial | 6: B_Cells |
| 13: T_Cells | 7: Fibroblast_Stroma |
| 14: T_Cells | 8: Myoepithelial |
| 15: B_Cells | 9: Fibroblast_Stroma |
| 2: T_Cells | |

Biological Validation



Stability Gradient Flow

