

The PaLM Algorithm

Profile the **spatial** locality

- How to describe the spatial locality of an variable?
- **X** lives in Block **B** with size of **B_size** in the memory
- $\text{spatial_density}(X) = \text{avg_}_\#_\text{of_values_accessed}(B, X) / B_size$

- ** not clearly defined in the original paper*

The PaLM Algorithm

Cluster variables into **temporal/spatial-cache-preferred**

- Locality metrics we have:
- Avg_accesses_per_value(X), Avg_reuse_dist(X), spatial_density(X)

Can benefit from temporal cache
if it is high

Can profit from spatial cache
if it is high

May be thrown out of cache
before next reuse
if it is high