

i-th GPU DRAM

i-th Zero-Copy

GASNet Mem

Calc New Currents

 $w_i$  : RWE  $p_i$  : ROE $w_i$  : ROE  $g_i$  : ROE $w_i$  $p_i$  $s_i$  $g_i$ all-  
shared  
nodes

Key

- ← Copy Operation
- ← - Reduction Operation
- Valid Data Instance
- Stale Data Instance
- \* Reduction Instance

Distribute Charge

 $w_i$  : ROE  $p_i$  : RWE $s_i$  : RdS  $g_i$  : RdS $s_i^*$  $g_i^*$ Reductions  
from other  
nodesCopies  
to other  
nodesCopies  
from other  
nodesCopies  
to other  
nodes

Update Voltage

 $p_i$  : RWE  $s_i$  : RWE $s_i$  $g_i$ 

Calc New Currents

 $w_i$  : RWE  $p_i$  : ROE $s_i$  : ROE  $g_i$  : ROE $g_i$