

BFS Iteration

①

Traverse new *frontier* array

frontier

②

Inspect outgoing neighbors:
1) Read *RPA* of frontier
2) Read *CIA* of frontier

RPA

CIA

③

Check if the neighbors are
visited and generate frontiers

*On-chip
Visit status*

④

Write new frontier vertices
to memory

frontier

Host &
Device
DDR

①

Update *level* of previous BFS

Shift the
random
access

Sequential memory access

Random memory access