

Binary tree
hierarchical codebook

Layer 1



Layer 2



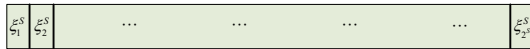
\vdots

Layer s



\vdots

Layer S



Width determined by array size

Width determined by beamforming algorithm

Wide Beams

Narrow Beams