

Idea (3A)

- CORDIC as a Search
- Increase CORDIC Precision
- Termination condition
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Think CORDIC as a search algorithm.

BFS (Breadth First Search)

DFS (Depth First Search)

A*

What is the relationship between “redundant CORDIC algorithm” and this CORDIC search algorithms?

What is the optimal solution in CORDIC?

What can be cost function of search algorithms?

Traditional CORDIC – greedy, Depth First Search

Literature shows this traditional CORDIC is not optimal
At least in the number of iterations.

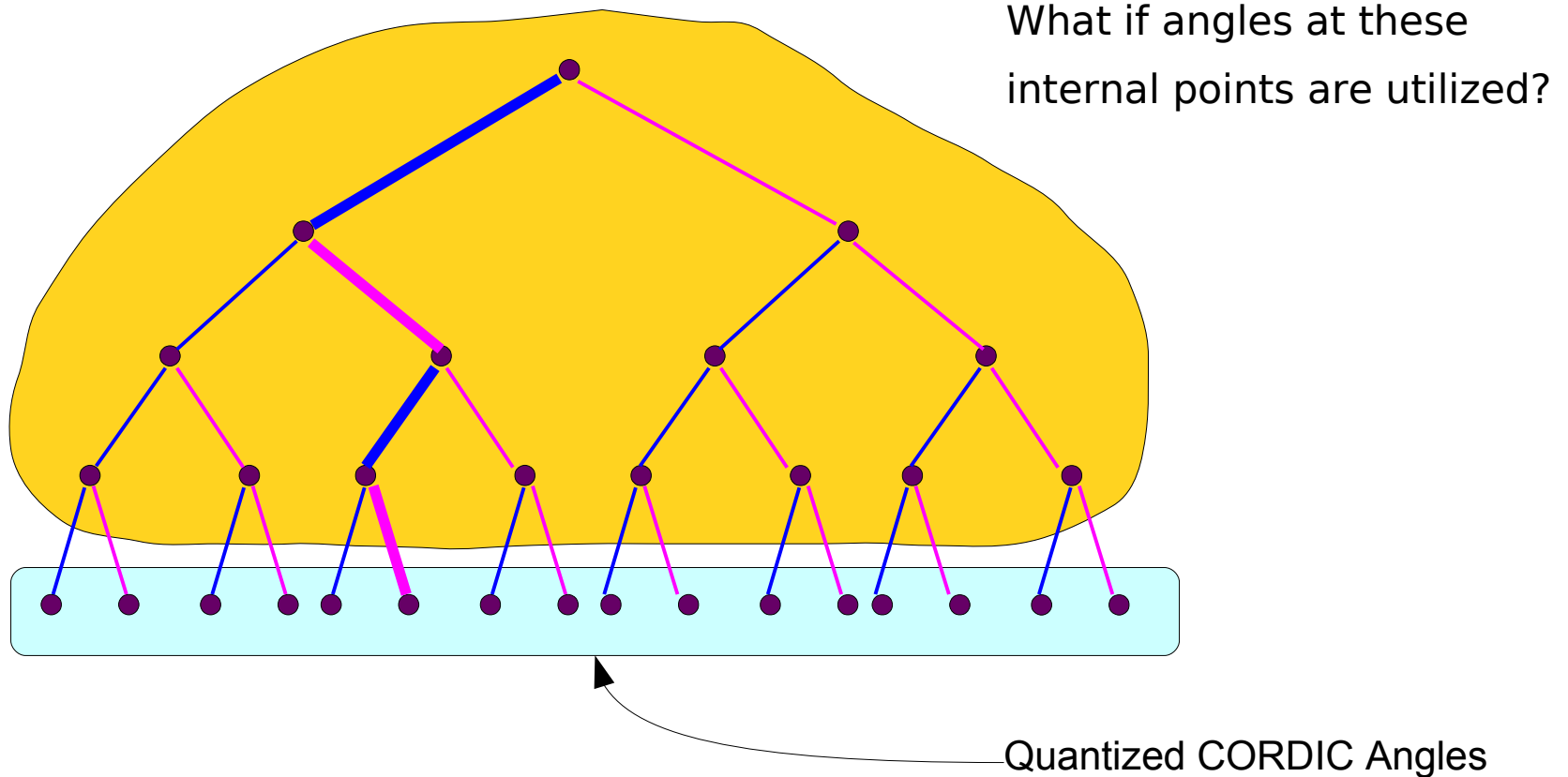
Angle Recording CORDIC
Look Ahead CORDIC

Adaptive CORDIC: Using parallel angle recoding to accelerate CORDIC rotations
[PDF] from utexas.eduTK Rodrigues... - Signals, Systems and ..., 2006 – ieeexplore.ieee.org

An angle recording method for CORDIC algorithm implementation
YH Hu... - Computers, IEEE Transactions on, 1993 - ieeexplore.ieee.org

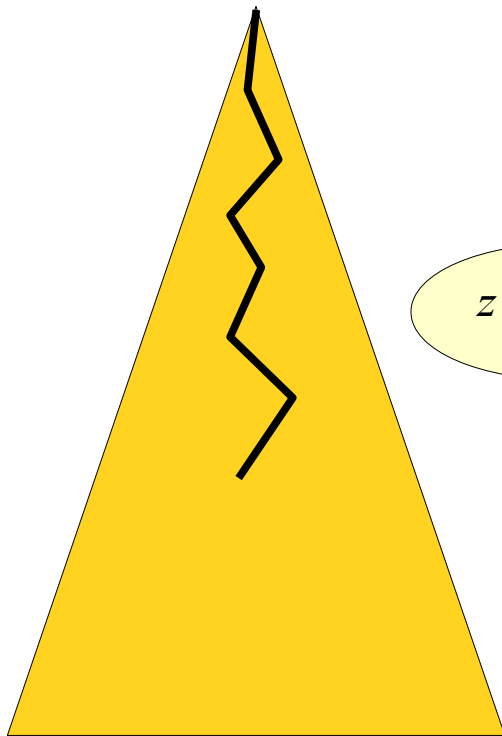
High-performance CORDIC rotation algorithm based on look-ahead techniques
CC Kao - International Journal of Electronics, 2011 - Taylor & Francis

CORDIC as a Search Algorithm



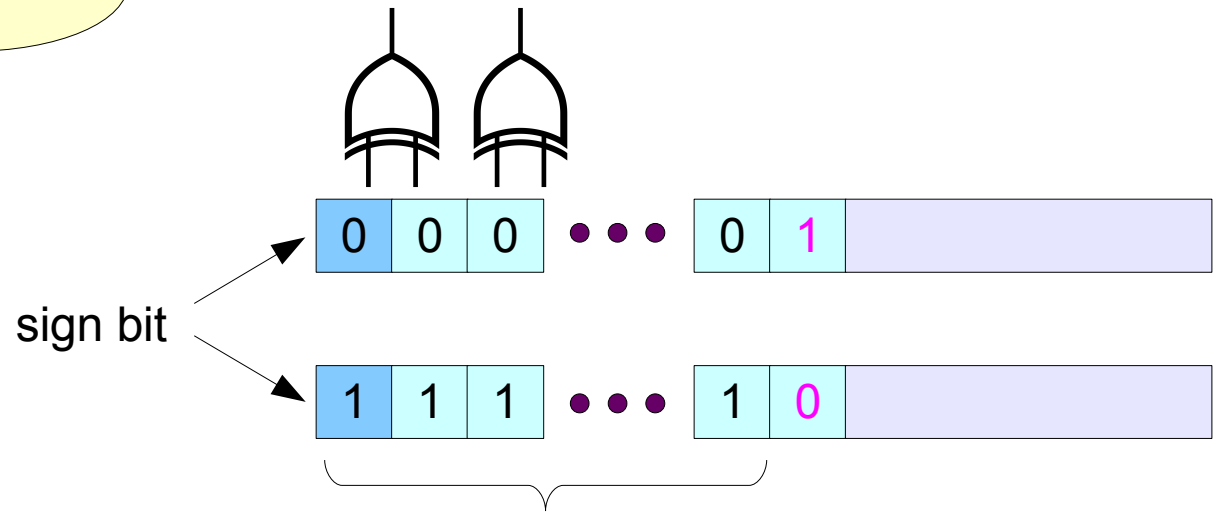
Find out heuristic functions
To increase precision
To reduce the number of iterations

Termination Condition



$$z[n] \leq \epsilon$$

may be implemented
without an additional adder



*Need more literature survey
To check if new idea or not*

Consecutive sign bits:
Counting leading zero's / one's

References

- [1] <http://en.wikipedia.org/>
- [2] J.H. McClellan, et al., Signal Processing First, Pearson Prentice Hall, 2003
- [3] A “graphical interpretation” of the DFT and FFT, by Steve Mann