CORDIC Vector README

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Block Functionality

The CORDIC Vector block takes real and imaginary components of a complex number and estimates the angle of the input vector. The output angle range is between $-\pi$ and $\pi$.

Block Interface

- **Input Word Length**: Total number of bits of inputs. (X and Y are assumed to have the same format.)
  - **Binary Point**: Number of fraction bits for inputs.
- **Output Angle Word Length**: Total number of bits of output angle
- **Output Angle Binary Point**: Number of fraction bits for output angle
- **Number of stages**: User can choose number of stages.

How Many Stages to Choose

The number of stages to choose depends on the accuracy of the result required. Figure 1 plots the normalized error of estimation for different stages.
Figure 1 Normalized Angle Estimation Error for CORDIC