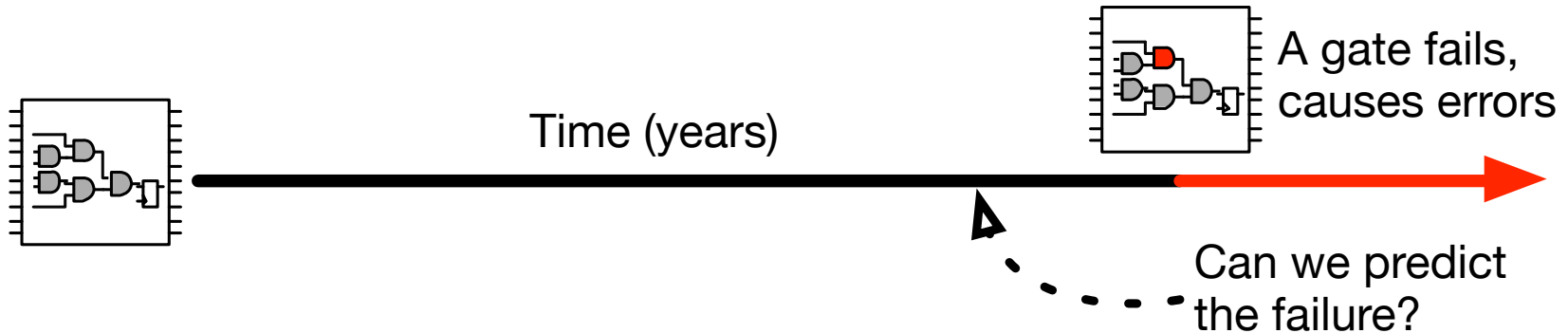


# Virtually Aged Sampling DMR

## Unifying Circuit Failure Prediction and Detection

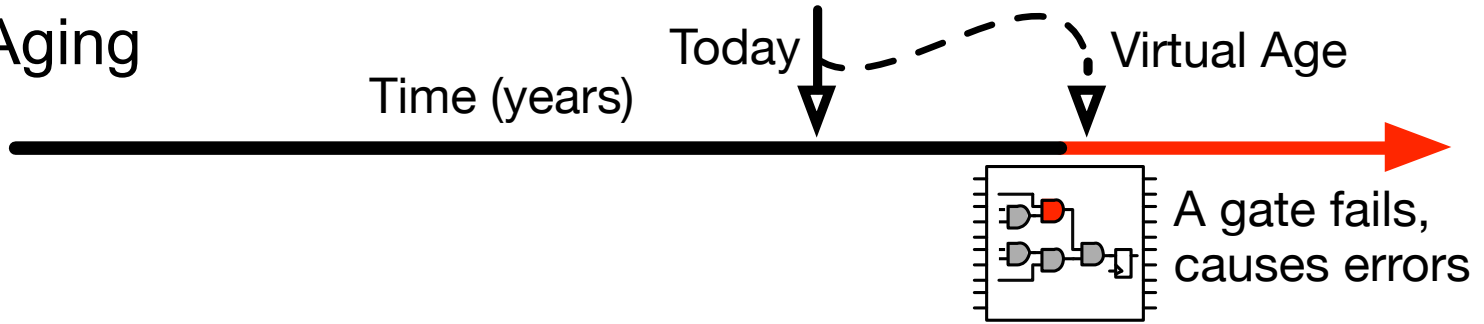
Raghuraman Balasubramanian  
Karthikeyan Sankaralingam





# Virtually Aged Sampling DMR

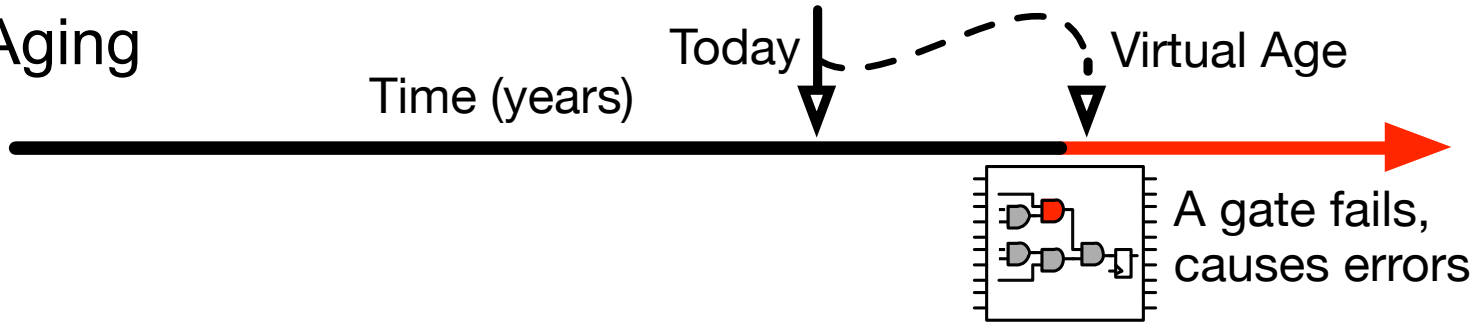
Virtual Aging



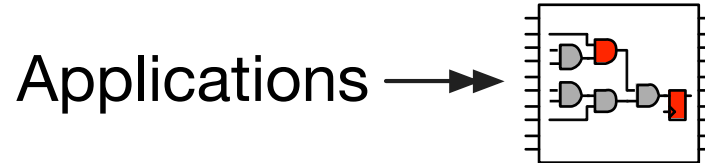


# Virtually Aged Sampling DMR

Virtual Aging



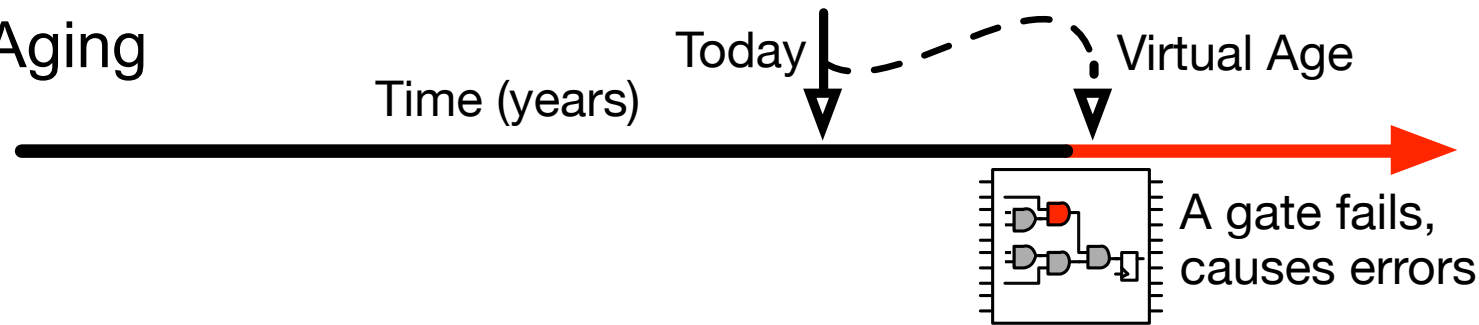
Fault Exposure



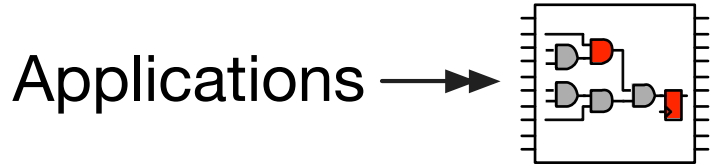


# Virtually Aged Sampling DMR

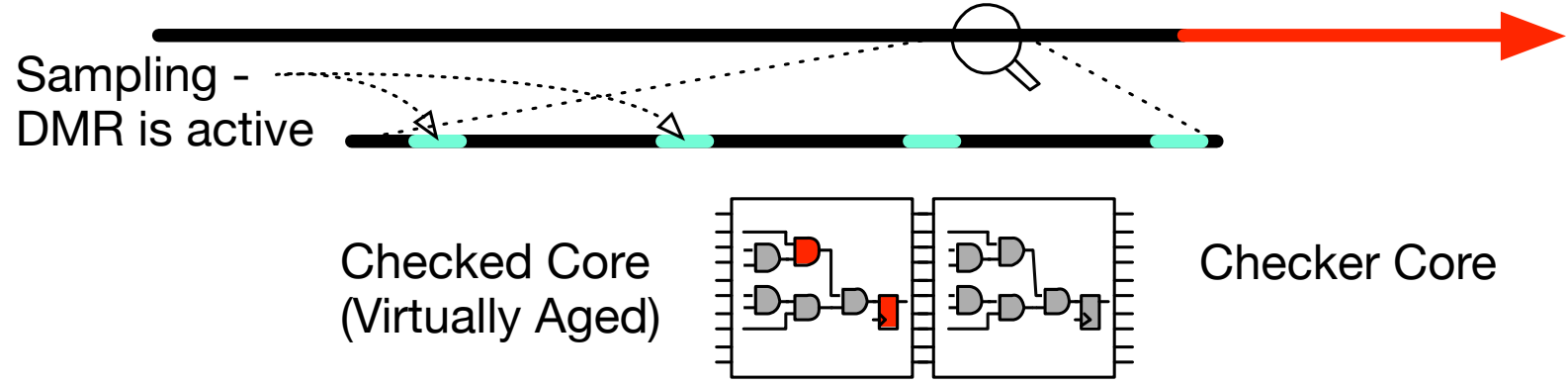
Virtual Aging



Fault Exposure



Detect Errors





# Virtually Aged Sampling DMR

**$\mu$ -Processor Failure Prediction Technique**



# Virtually Aged Sampling DMR

$\mu$ -Processor Failure Prediction Technique

Comprehensive Coverage



# Virtually Aged Sampling DMR

$\mu$ -Processor Failure Prediction Technique

Comprehensive Coverage

No Performance Overhead

Less than 0.7 % Energy Overhead



# Virtually Aged Sampling DMR

$\mu$ -Processor Failure Prediction Technique

Comprehensive Coverage

No Performance Overhead

Less than 0.7 % Energy Overhead

Today @ 3:30PM Alpha Gamma Rho