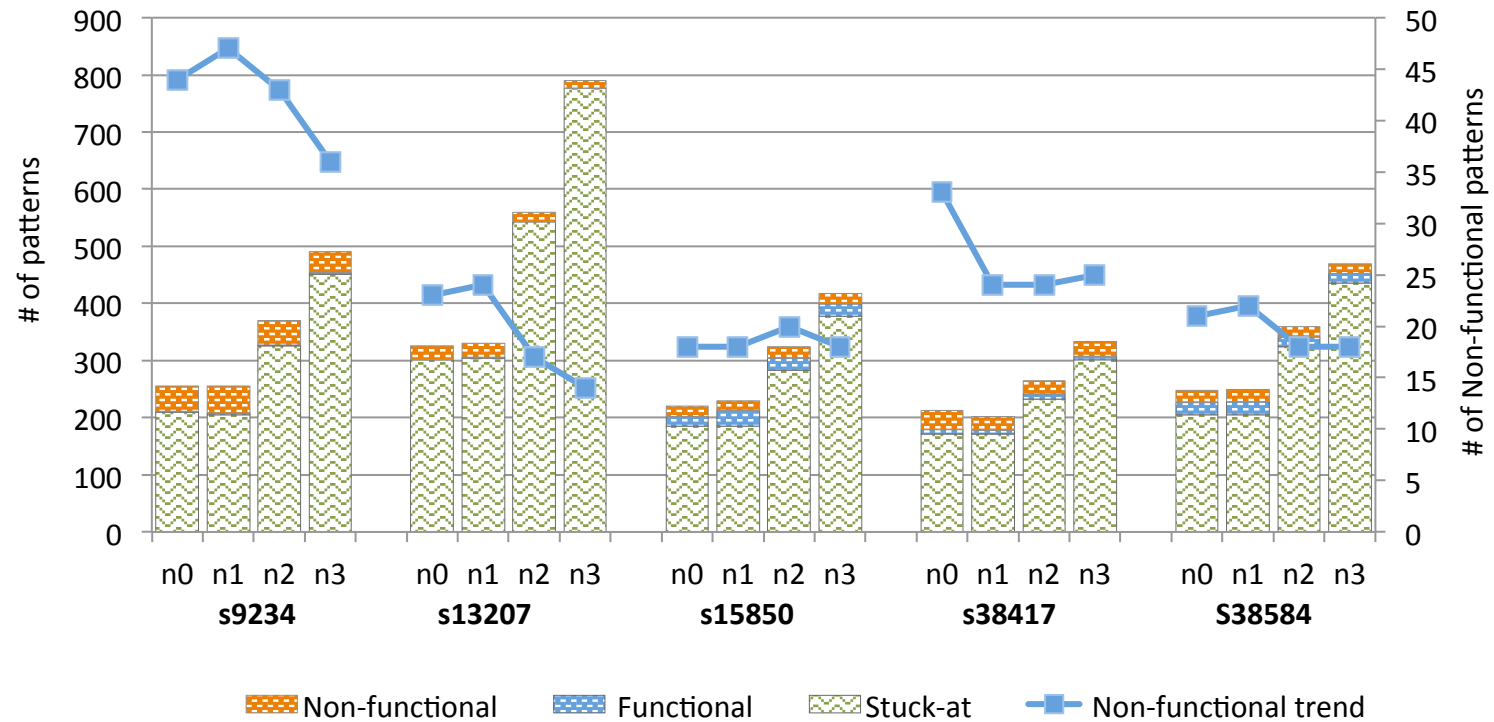


## Stuck-at patterns V.S. Cell-aware top-off patterns

Fault set 1; 10k\_1st Good-States

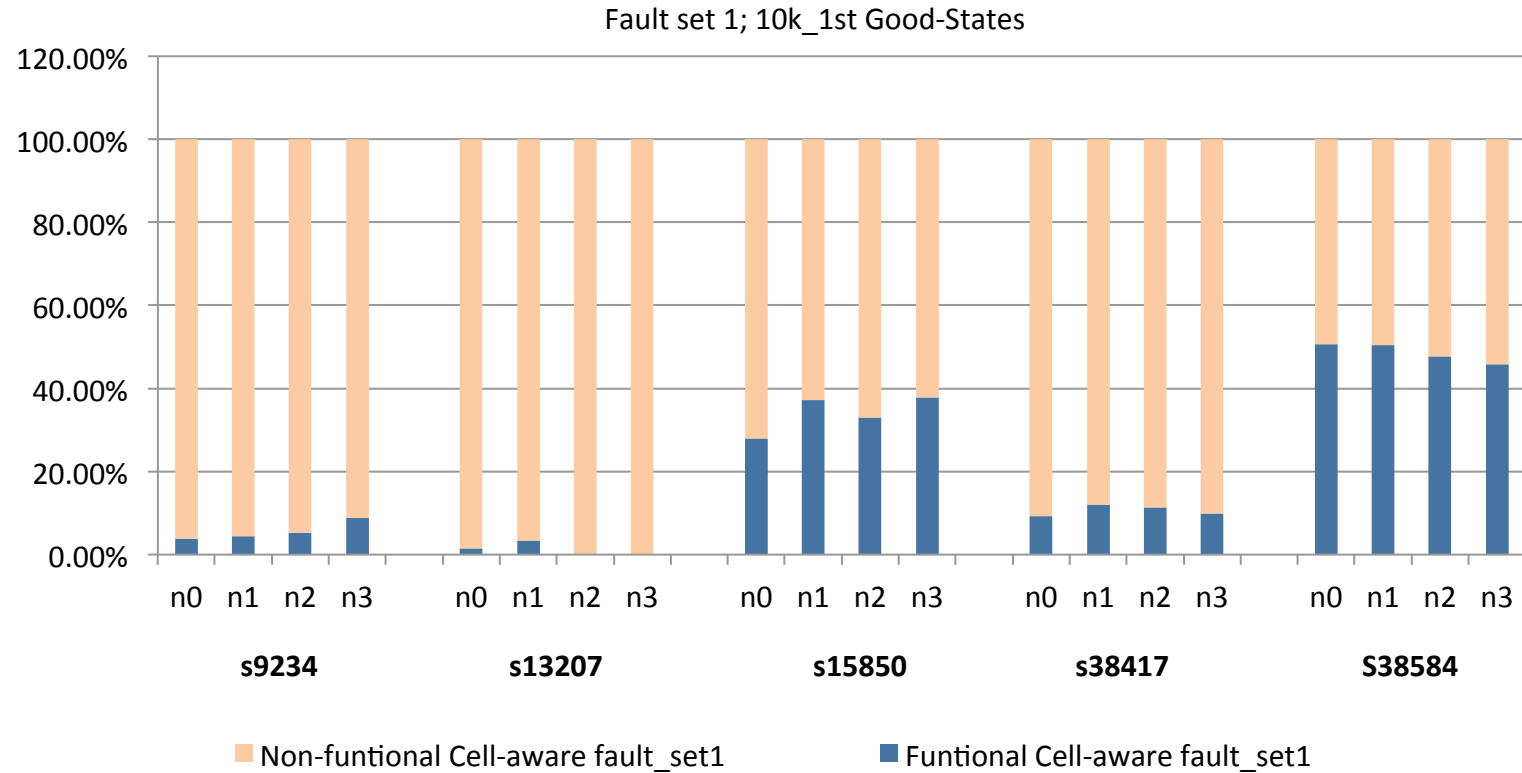


## % increase in test length when non-functional cell-aware faults are included in fault set



Equation  $\% = \frac{\# \text{ of non\_functional Cell\_Aware faults patterns}}{(\text{stuck\_at ATPG} + \# \text{ of funtional Cell\_aware patterns})}$

## Distribution of Cell-aware faults between functional & non-functional for those not detected by stuck-at ATPG



Equation

(1)  $\% \text{ non\_functional} = \frac{\# \text{ of non\_functional Cell\_Aware faults}}{\# \text{ of non\_functional Cell\_Aware faults} + \# \text{ of functional Cell\_Aware faults}}$

(2)  $\% \text{ functional} = \frac{\# \text{ of functional Cell\_Aware faults}}{\# \text{ of non\_functional Cell\_Aware faults} + \# \text{ of functional Cell\_Aware faults}}$

Number of detections for each fault detected by Good-State patterns

