



MICRO-50, Boston, October 2017

Tutorial:

Microarchitecture Level Reliability Assessment

Throughput and Accuracy

<http://micro50-tutorial.di.uoa.gr/>

Organizers/Presenters:

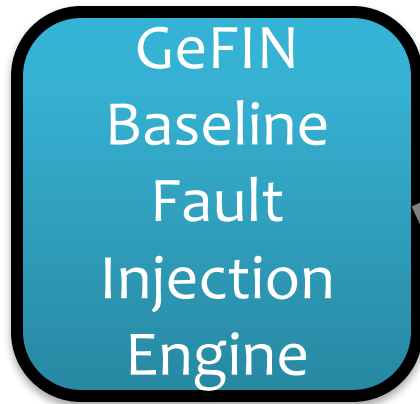
Athanasios Chatzidimitriou, Manolis Kaliorakis, Dimitris Gizopoulos



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Part 6: Wrap-up

The Tools

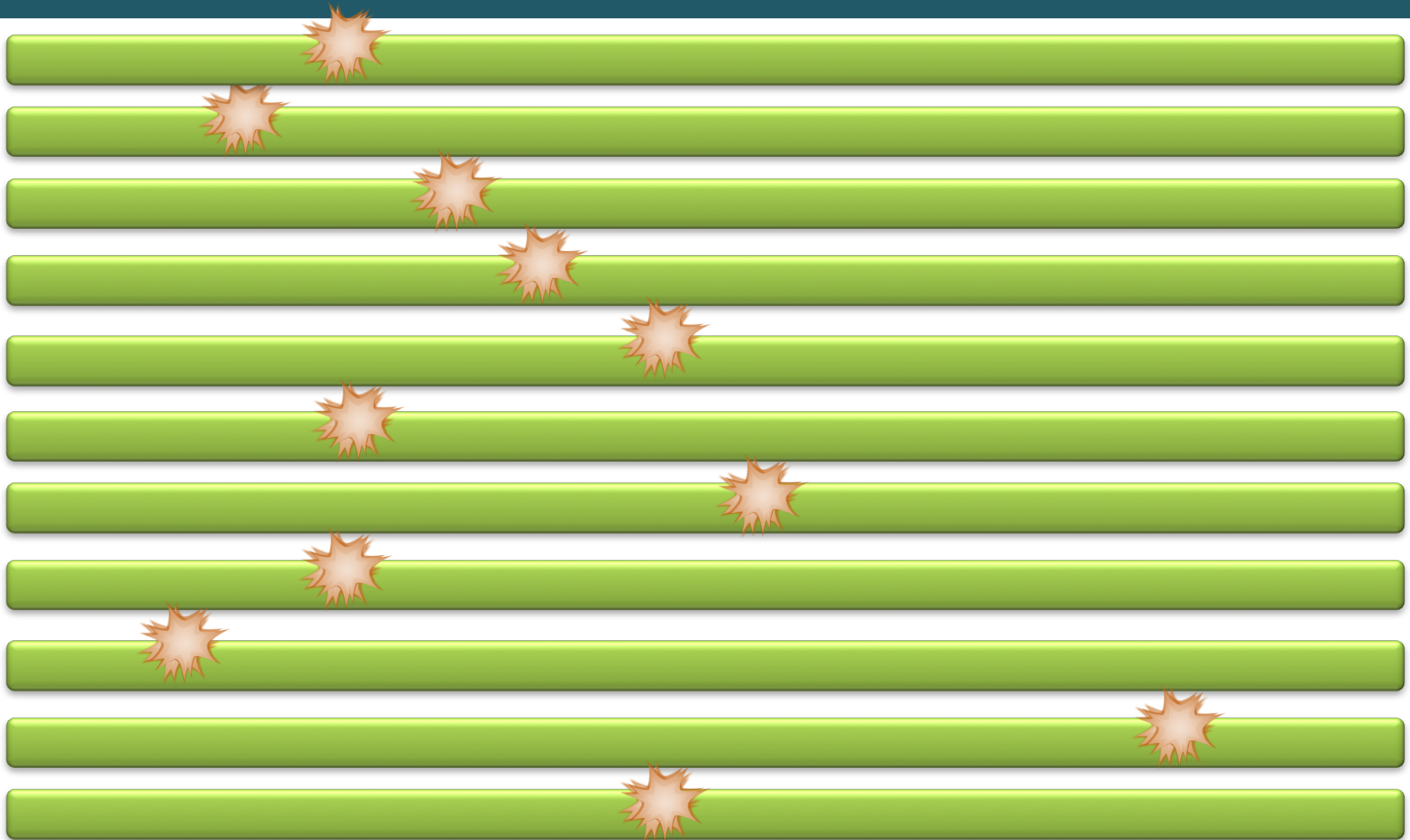


GeFIN = Gem5-based Fault Injector

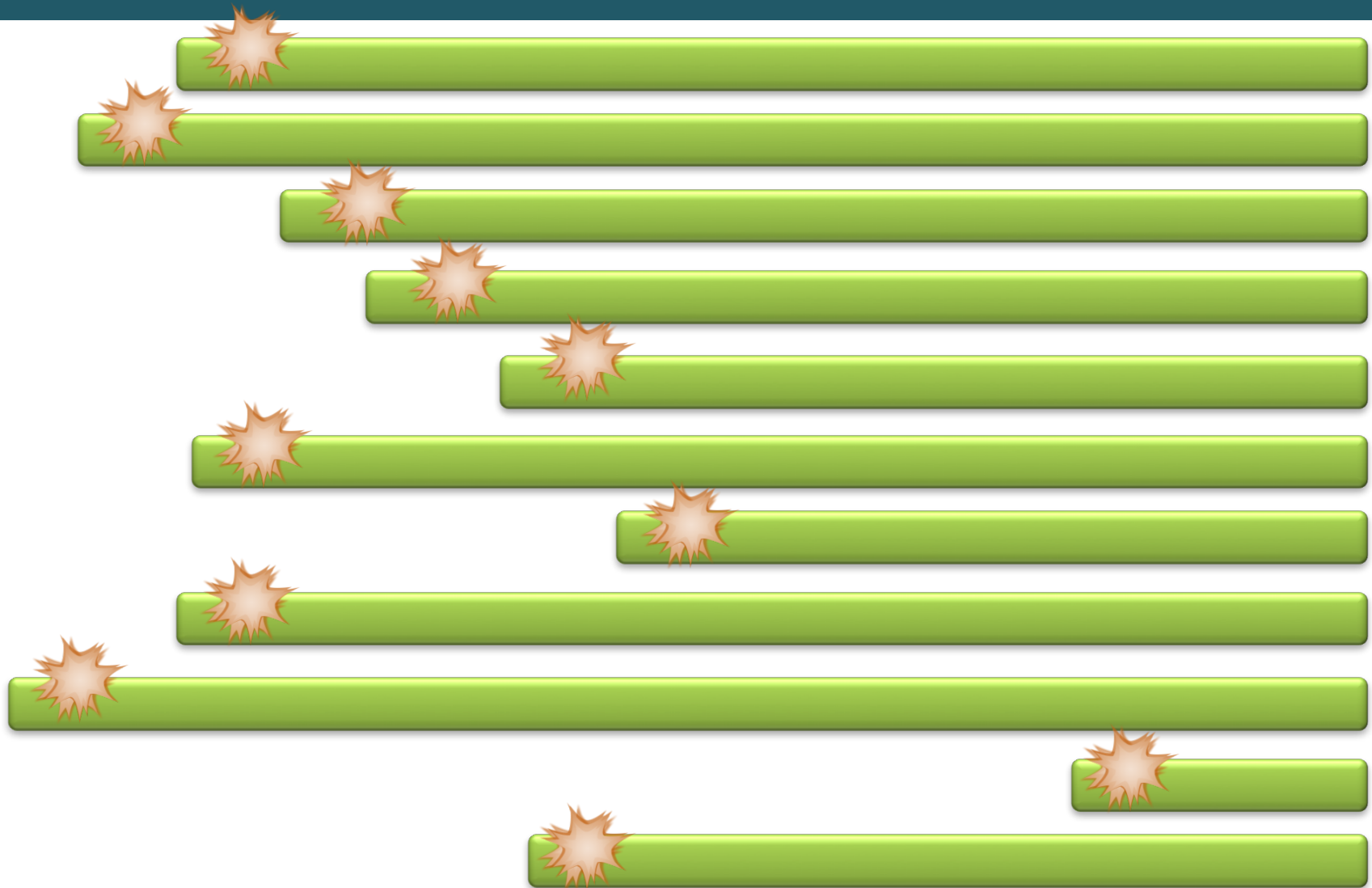
MeRLiN = Microarchitectural evaluation
of Reliability using statistical fault iNjection



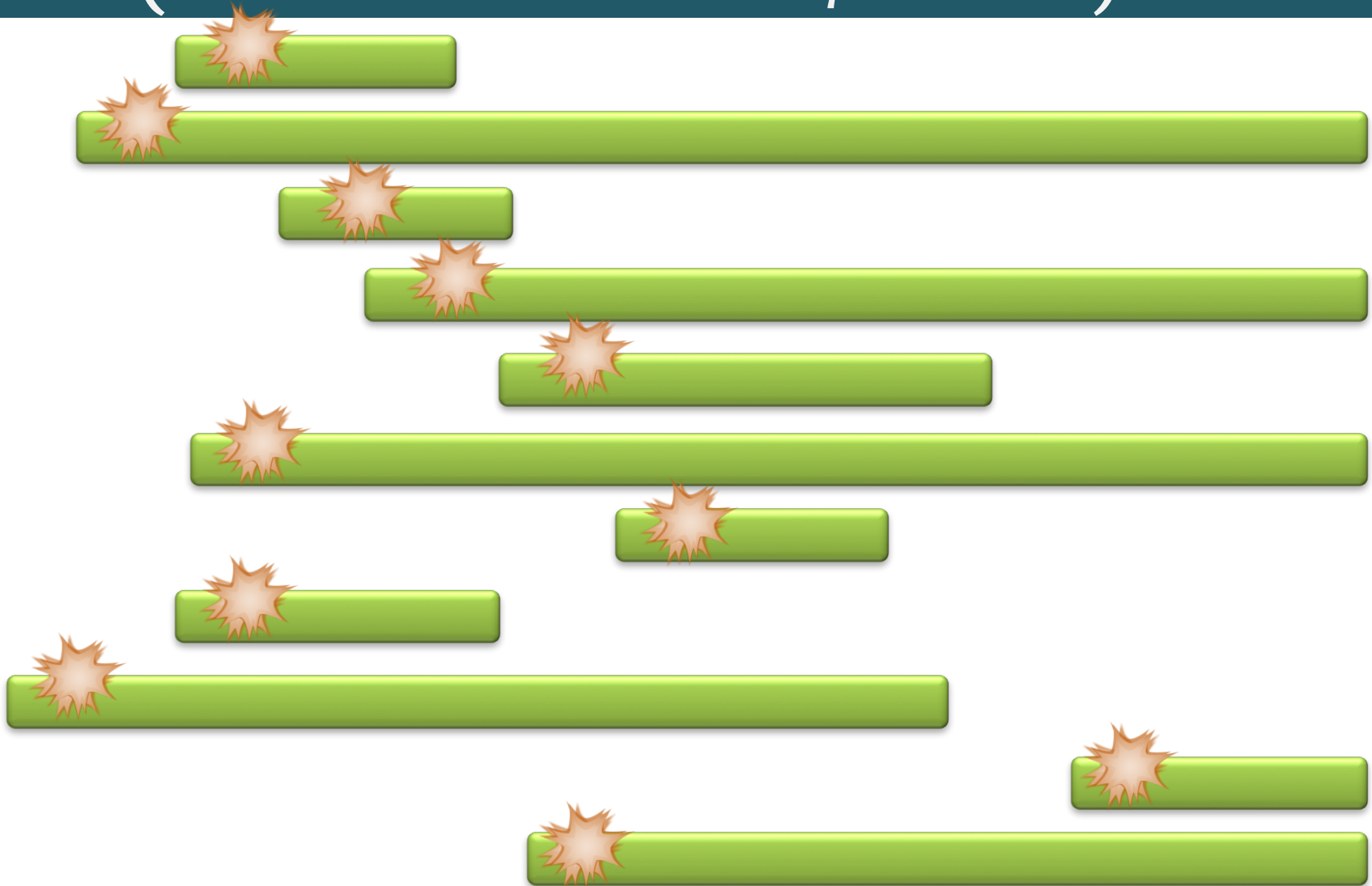
Step 0 – GeFIN Baseline End-to-End



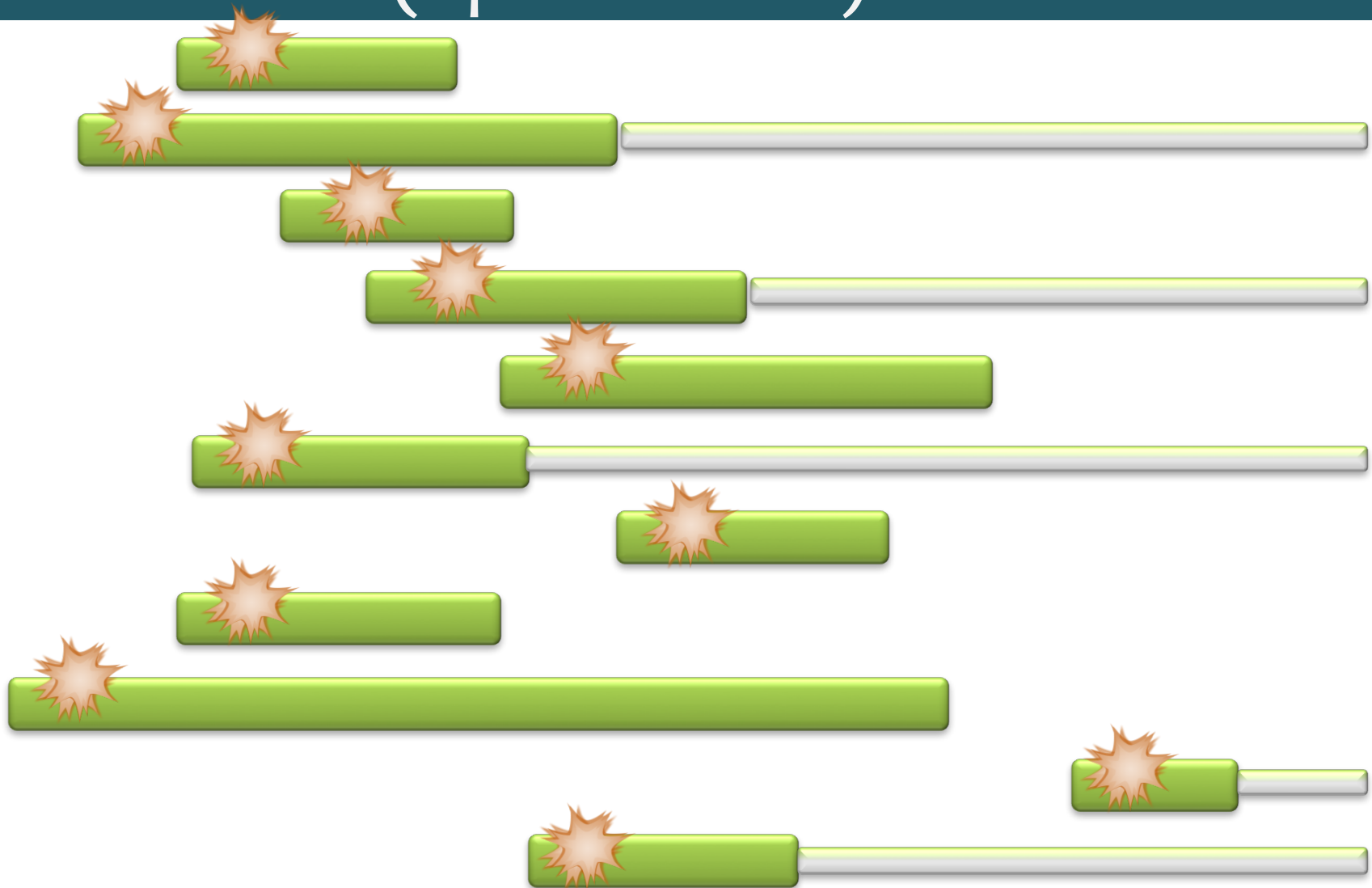
Step 1 – GeFIN Fast-Forwarding



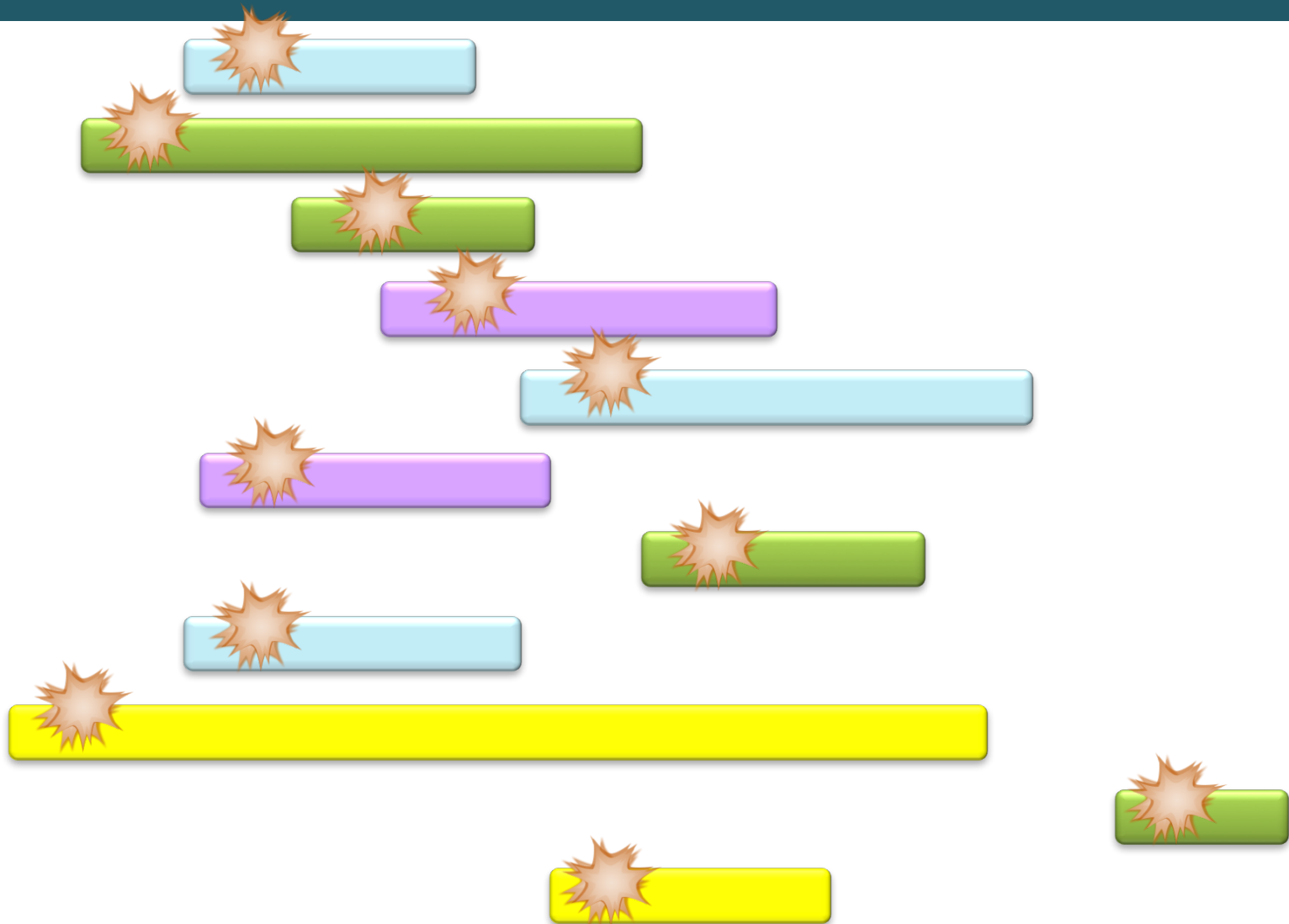
Step 2 – GeFIN Early Stops (Safe on Overwrite/Invalid)



Step 3 – GeFIN Early Limits (Speculative)



Step 4 – MeRLiN Grouping



Step 5 – MeRLiN Selection



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Publications

- **ISCA 2017**
 - ACM/IEEE Intl. Symp. on Computer Architecture
- **DSN 2017**
 - IEEE/IFIP International Conference on Dependable Systems and Networks
- **VTS 2017**
 - IEEE VLSI Test Symposium
- **ISPASS 2016**
 - IEEE Intl. Symp. on Performance Analysis of Systems and Software
- **IISWC 2015**
 - IEEE Intl. Symp. on Workload Characterization
- **ITC 2016**
 - IEEE International Test Conference
- **VTS 2016**
 - IEEE VLSI Test Symposium
- **DFTS 2015**
 - IEEE Symposium on Defect and Fault Tolerance
- **IOLTS 2016, 2014**
 - IEEE International On-Line Testing Symposium
- **ICCD 2013**
 - IEEE International Conference on Computer Design



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Thank you!

<http://cal.di.uoa.gr/>