Dirt Spot Sweeping Random strategy

In this poster, an enhanced and improved form of automated random testing called Dirt Spot Sweeping Random (DSSR) strategy is introduced. DSSR is a new strategy that not only combines ordinary random strategy and random plus strategy to achieve their combined benefits but additionally sweeps the dirt spots in the program code for faults. It is based on two intuitions, first is that values from the boundaries of equivalence partition have interesting values and using these values in isolation can locate many faults which can produce high impact on test results while second is that faults reside in block and strip pattern of the program and when a fault is found it is most likely that it lies on this pattern therefore using neighbour values of the fault finding value can reveal more faults quickly which will consequently increase the test performance. DSSR is implemented in an open source automated random testing tool called York Extensible Testing Infrastructure (YETI). After implementation several experiments were performed on two groups of classes. First group contain error seeded programs written specifically for performance evaluation of DSSR while the second group contain classes from Java Development Toolkit (JDK). Experimental results of both groups showed that DSSR perform up to 30 \% better than pure random testing.

**General Comments:**

In this research work we are presenting an enhanced and improved version of automated random testing called Dirt Spot Sweeping Strategy or DSSR.

The strategy is explained with the help of flow-chart and the execution of DSSR is studied by applying it to a test program.

Experiments have been performed to check the authenticity of the efficiency of DSSR and results show that DSSR is upto 80% better than pure random.