INTRODUCTION
Since the start of its operations in 2001, the CDF Run II Silicon Detector at Tevatron has served extensively in almost every physics analysis performed at CDF. Throughout these years a valuable experience has been accumulated which is offered for the benefit of new and future HEP silicon detectors.

OVERVIEW OF THE CDF SILICON DETECTOR
Three component subdetectors:
- SVX-II
  Main component for vertex and track reconstruction. Compact, double sided sensors
- L00
  Mounted on the beam pipe, improves vertex resolution
- ISL
  The most outer subcomponent, extends coverage to forward and backward regions

BATTLE AGAINST CORROSION IN COOLING SYSTEMS
The Problem
- In 2007, leakage in the ISL cooling internal pipelines
- Found high acidity in coolant, pH = 2 ~ lemon juice
- Formic acid had been formed out of the glycol/water mixture (after warming up during a long shutdown)
- Corrosion had affected the aluminum pipes

The Solution
- Internal walls of pipes were probed and repaired from outside introducing long boroscopes and catheters
- Holes were filled with epoxy (1 m depth inside the CDF detector!)
- The coolant fluid was replaced by deionized water
- The pH and conductivity are controlled at safe values by means of deionizer resin filters

AUTOMATION OF HV OPERATIONS
Features of the system
- Recognizes, resets and recovers unresponsive power supplies
- Recognizes trips and recovers sensors
- Human intervention has been minimized by automatic systems

PERFORMANCE
Good Signal-to-Noise ratio projection until 2011 (minimum for b-tagging is \(~3\))

CONCLUSIONS
- Eight years of operational experience have left a legacy for newer and future detectors
- Potential damage of Lorenz induced resonances MUST be studied and prevented in any collider silicon detector
- Corrosion prevention MUST be taken into account in the design and operations of any silicon detector
- The CDF Silicon Detector is in good condition to run until the end of the Tevatron operations

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Ongoing Maintenance
- Aging of power supplies, decrease in delivered voltage
- In 2007 the majority of power supplies were repaired
- Most of the detector hardware issues can be fixed in \(~1\) hour work in Collision Hall

Performance
- Satisfactory hermeticity in cooling lines (leakage rate = 0.2 PSI/min, after closing all valves)