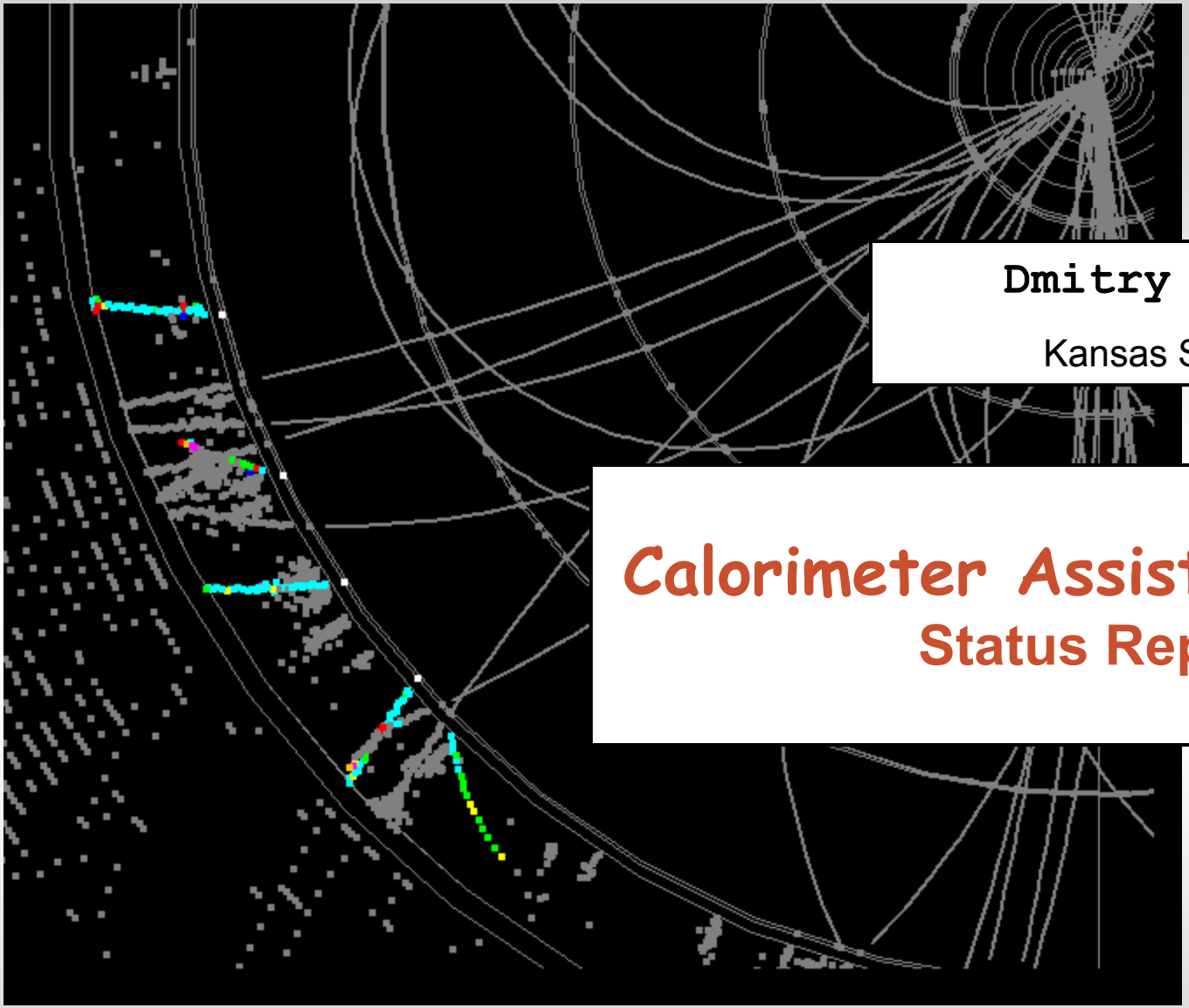


Dmitry Onoprienko

Kansas State University

Calorimeter Assisted Tracking
Status Report

SiD Detector Workshop at SLAC, October 26-28, 2006

Calorimeter Assisted Tracking

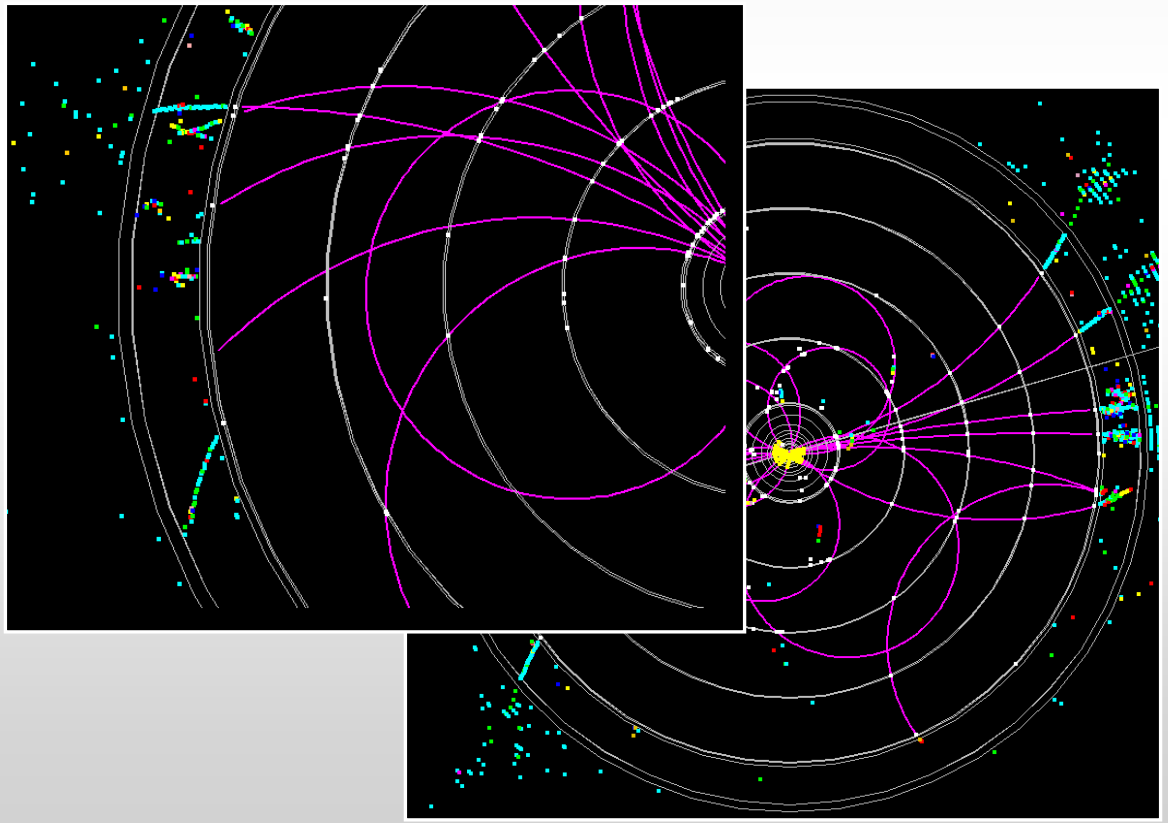
aka Garfield tracking package

Goal: reconstruct tracks that cannot be picked up in VXD, starting from the other end – MIP stubs in EM calorimeter.

Originally motivated by the need to reconstruct long lived particles (like K_S^0, Λ, or some exotics) that do not leave enough hits in the vertex detector

Other uses:

- Calorimeter backscatters
- Kinked tracks
- Track-cluster association
- VXD-less tracking



Current status

In CVS (org.lcsim.contrib.garfield) :

- fully functional
- includes performance testing/tuning package
- not very good efficiency in 500 GeV events

Updated version

- improved efficiency
- plan to put in CVS in 2-3 weeks
- still a temporary solution

More advanced tracking infrastructure
is needed for further development

Plans

More advanced tracking infrastructure is needed for further development

- decided against elaborating our custom classes for tracks, 2-dim hits, etc.
- would like to switch to framework-supported solutions
- digitization / segmentation

Need to integrate with VXD-seeded tracking

- this package has never been intended as a standalone tracking code
- many common steps with other track finders/fitters

Plan to provide plug & play tools for tracking and PFA :

- track seed generator
- fake track removal