

BOSTON JET PHYSICS WORKSHOP

January 12-14, 2011

Jefferson Laboratory, Harvard University

ORGANIZERS

Harvard

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Matthew Schwartz

MIT

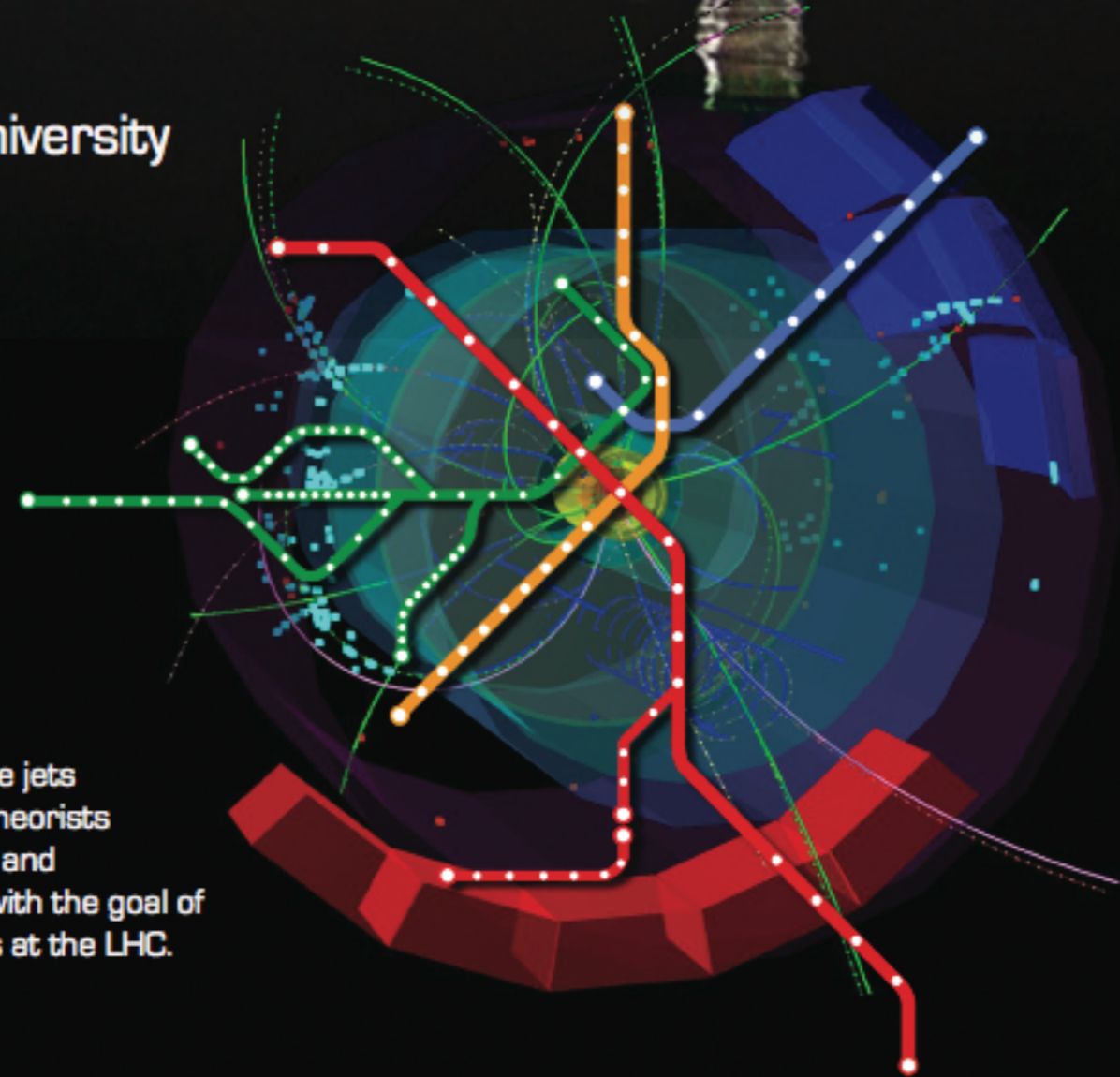
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Keith Rehermann
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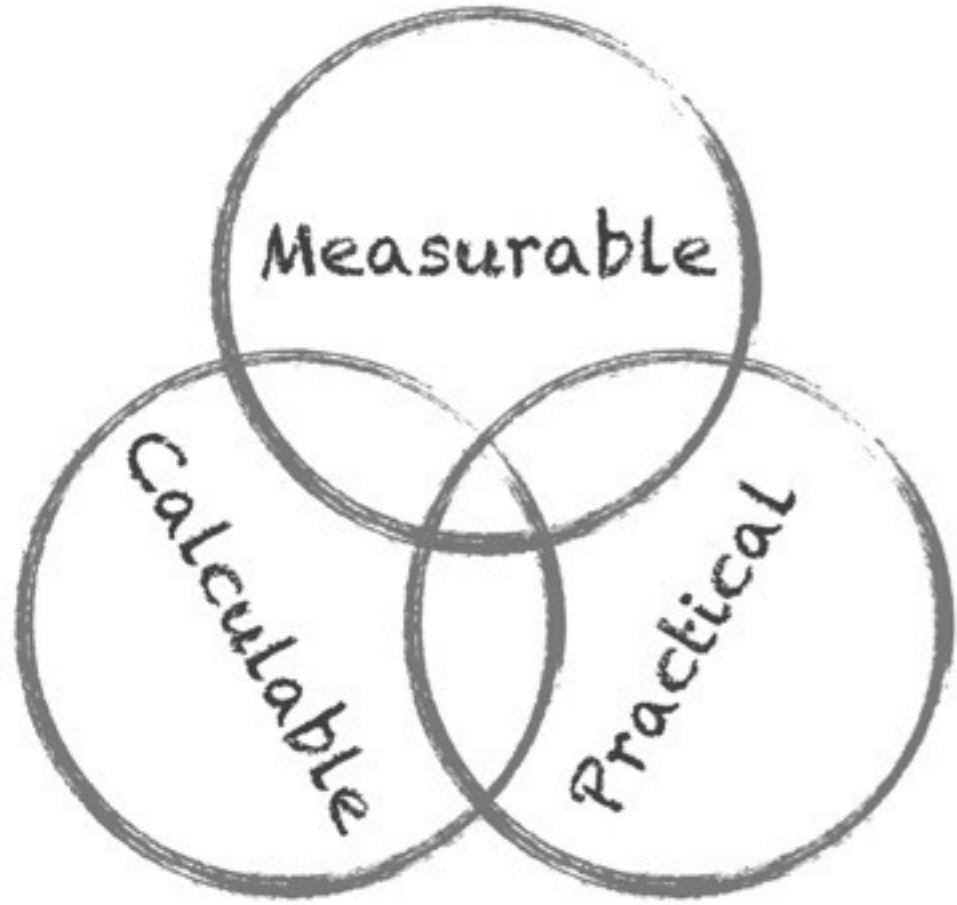
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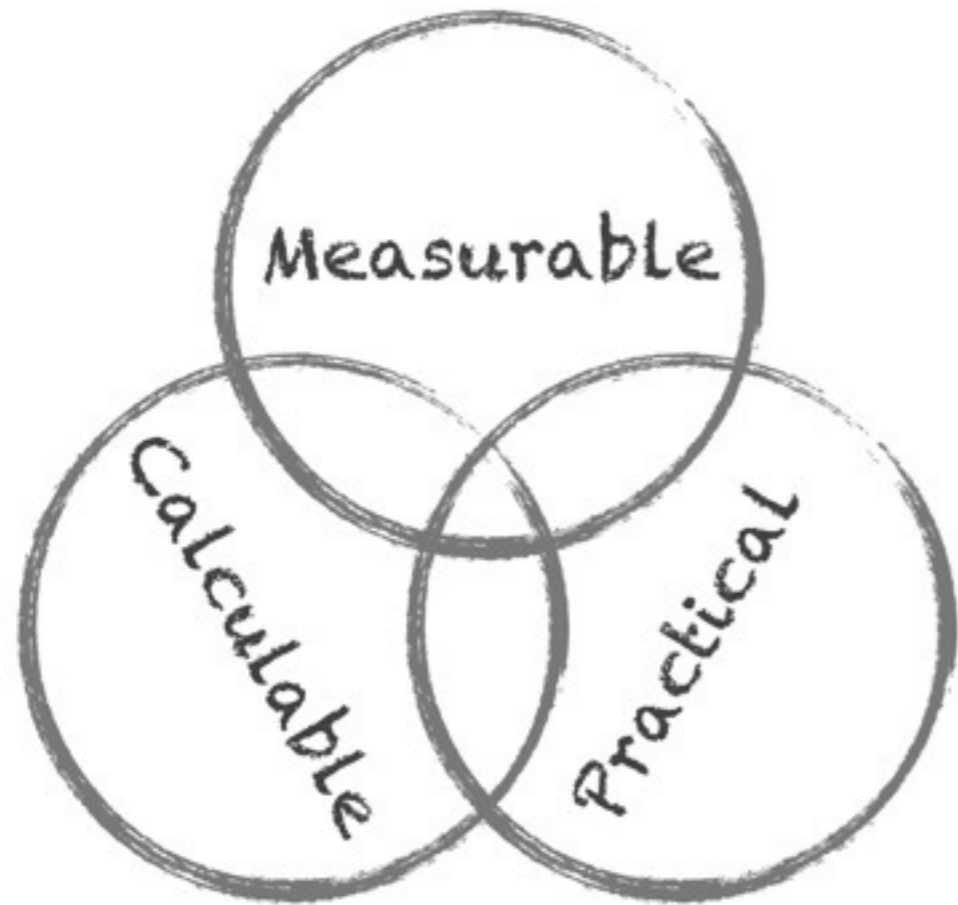
This workshop will focus on improving our ability to use jets in collider physics applications. It will bring together theorists working on both analytic and Monte Carlo jet physics, and experimentalists working to measure jet properties, with the goal of maximizing the physics potential of jet measurements at the LHC.

<http://jets.physics.harvard.edu/>





From Jet Identification...



What jet algorithms...

M: ...have controllable systematics?

C: ...give well-behaved expansions?

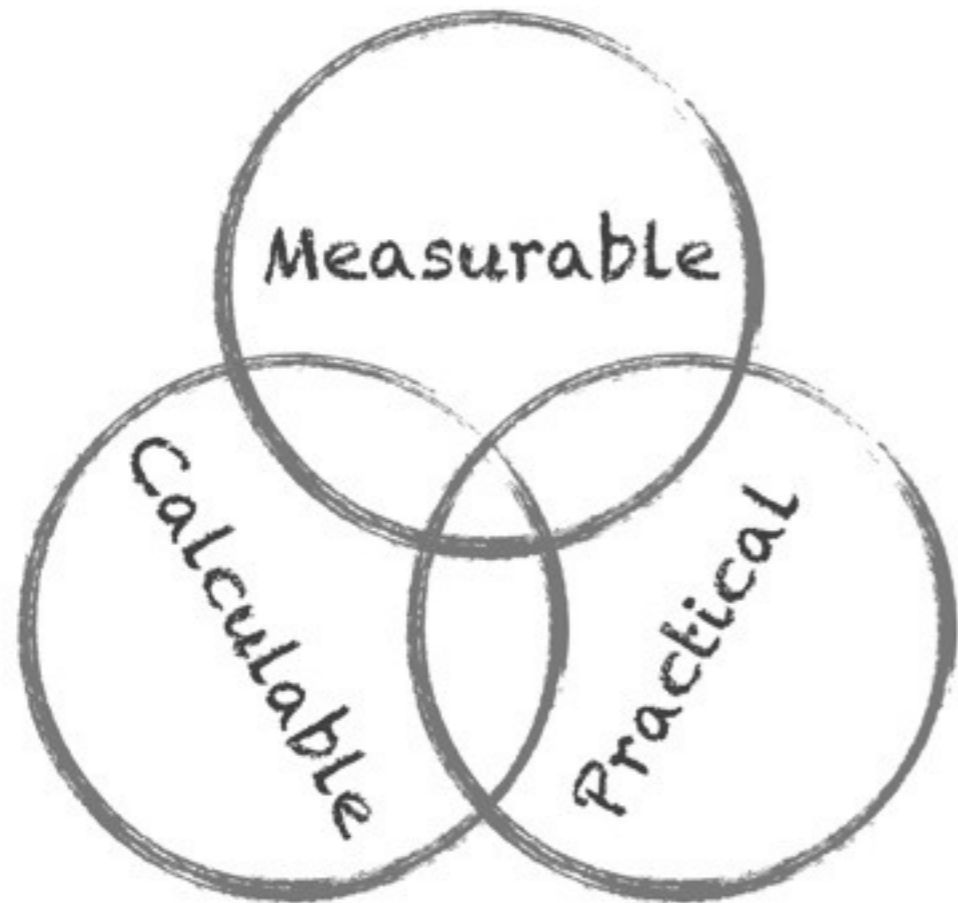
P: ...offer most sensitivity?

Consensus: Anti-kT is very effective, but should not be only algorithm used for analysis.

Varying jet radii should be exploited.

Dispute: Odd vs. Even

...to Jet Substructure



What QCD tests (jet shapes) and what tagging methods (top, W/Z/H, g/q, ...)...

M: ...can be validated in data?

C: ...have well-behaved expansions?

P: ...best distinguish?

Consensus: At minimum, jet mass must become a standard jet measurement. Need for high granularity calibrations and effective pileup control. Need Data & MC & pQCD/SCET.

Disputes: Spikes vs. Moments, Inclusive vs. Groomed, Silver Bullet vs. Kitchen Sink, Outside-In vs. Inside-Out...

Future Jet Workshops

C? M! P? “Classic” Jet Observables

C! M? P? Jets in Medium

C! M? P? Transverse Structure

C! M? P? Jet Finding vs. Jet Vetoes

C? M? P! Estimating Jet Cross Sections

C? M? P? Non-Global Logarithms

C? M? P? Monte Carlo Tuning

