Fermilab

MC4BSM

Workshop on

Monte Carlo Tools for Beyond the Standard Model Physics

Welcome!

NOTE! PLEASE TAKE SEATS AS CLOSE TO THE STAGE AS POSSIBLE

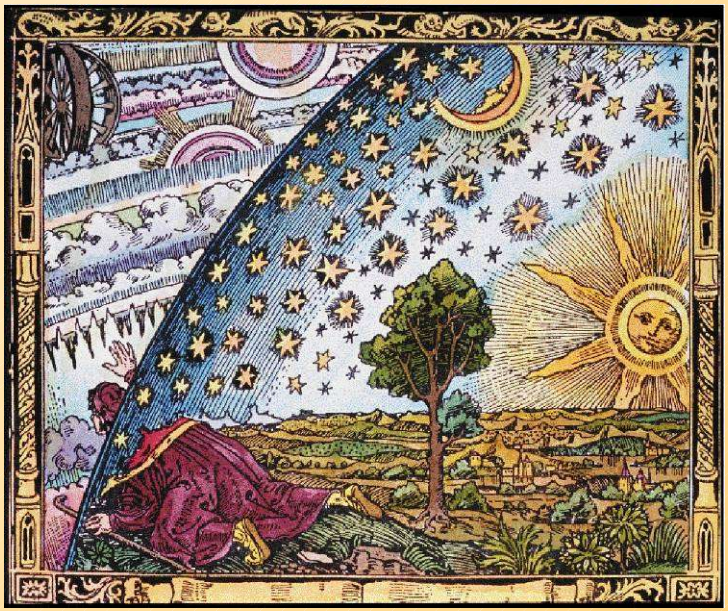
Sponsored by: Fermilab

Location: Ramsey Auditorium, Fermilab, March 20-21, 2006

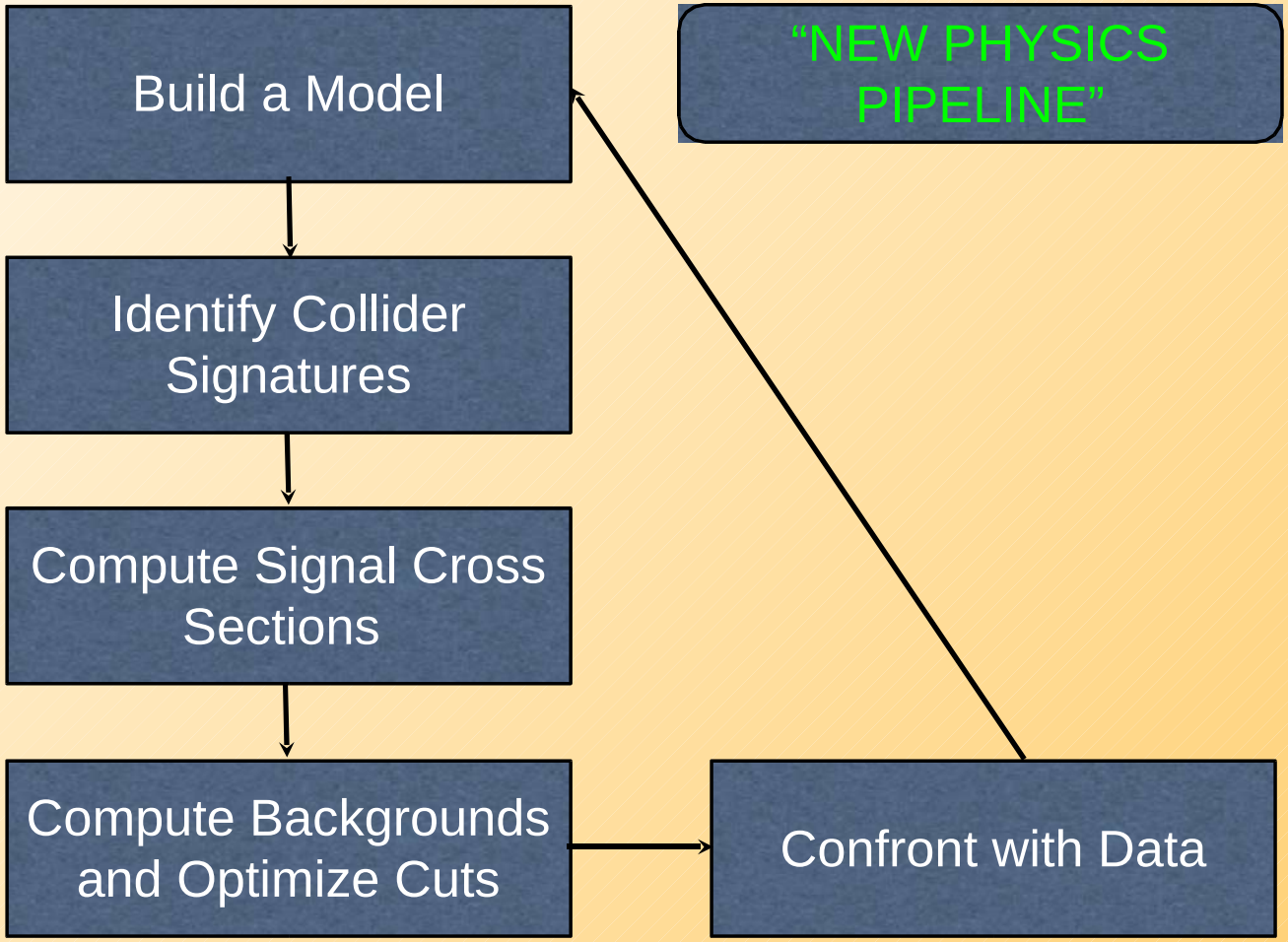
Organizing Committee: Marcela Carena, Mu Chun Chen, Bogdan Dobrescu, Chris Hill, Jay Hubisz, Joe Lykken, Konstantin Matchev, Stephen Mrenna, Maxim Perelstein, Jose Santiago, Peter Skands

Beyond the Standard Model

- The mechanism which breaks electroweak symmetry remains a fundamental, unsolved mystery
- Several ideas for what the EWSB mechanism might be have been proposed (supersymmetry, dynamical symmetry breaking, extra dimensions, little Higgs, ...)
- True model is unknown (only theoretical prejudice to guide us at this point...)
- All models predict new physics at energy scales accessible in the near future - theory will be confronted with data

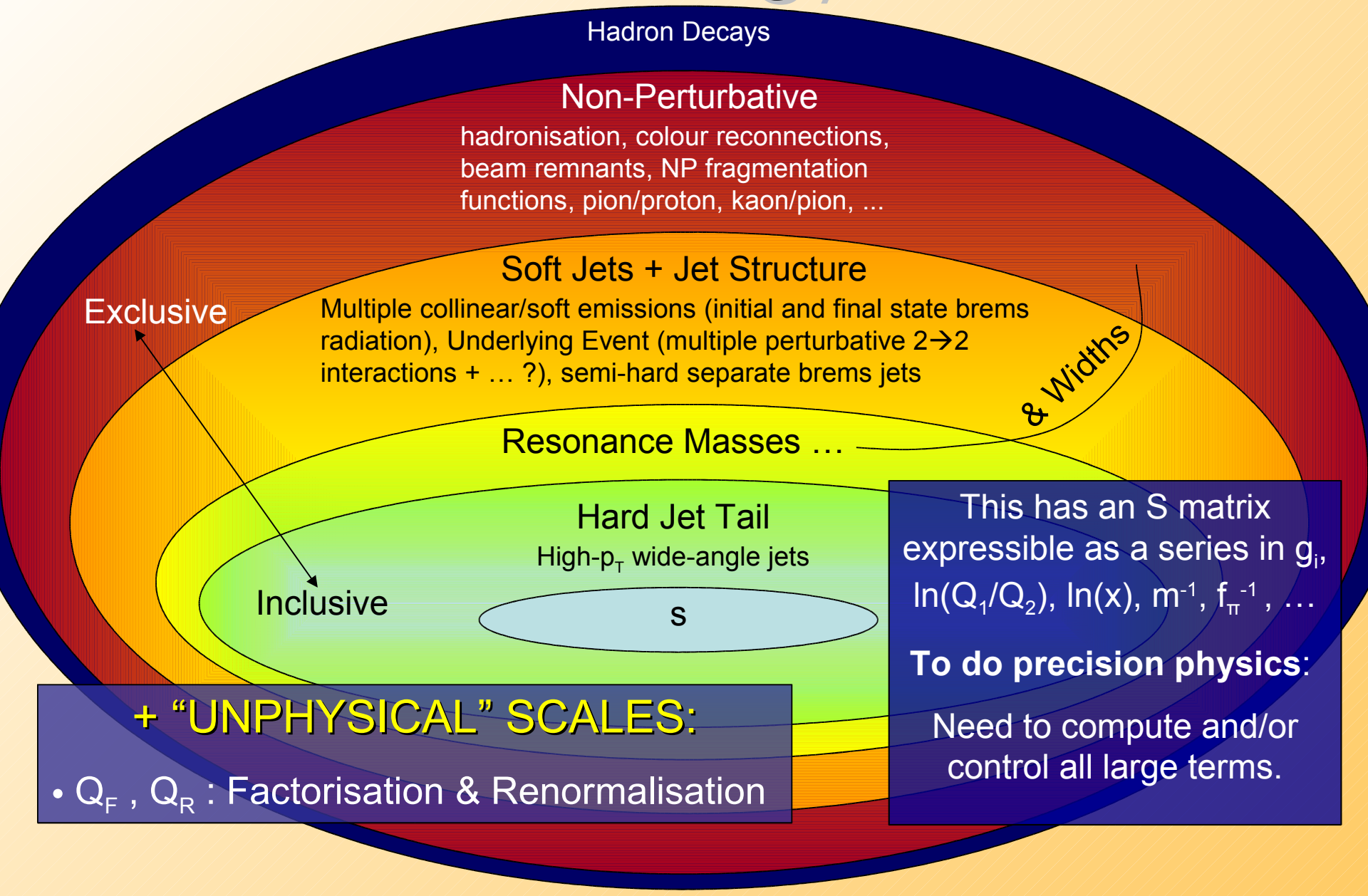


BSM Phenomenology



From M. Perelstein

Collider Energy Scales



Charge

- **First workshop on (exclusively) exotic BSM**
  - We are less developed than SUSY
  - Rapidly expanding, lots of new models
  - Good to get organized before chaos
- **Exchange of information**
  - Education: experts → non-experts
  - Feedback: non-experts → experts
  - Synergy: experts ←→ experts
- **Coordinate**
  - Avoid duplication of effort
  - Streamline: agree on conventions & technical solutions
  - Share information: e.g. Les Houches Repository
    http://www.ippp.dur.ac.uk/montecarlo/BSM

Discussion Sessions

Monday 4:30 in **parallel** (1.5 hrs each)

by cafeteria

1. Automated matrix element calculations **[One West]**
   - Universal model specifications for MadGraph/CompHEP/…
   - Discussion on Improvements for general BSM

   2nd floor
2. The MC interface: From ME's to events. **[Curia II]**
   - The existing Les Houches Accords etc. What more is needed?
   - Passing decay information on new resonances (SLHA extension?)
   - Discussion on Improvements for general BSM
3. Dark Matter: models and tools **[Ramsey]**

Tuesday 4:30 in **plenary** (1/2 hrs each) **[Ramsey]**

– Three sessions (1,2,3), each consisting of:
  - Report of yesterday's discussion / conclusions / open questions
  - Comments and questions from plenary

Practical Details

Wireless:

- connect to "tsunami" (unsecured, no password).
  - Open browser (allow cookies)
  - Fill in personal details, accept virus scan
  - Reboot → access
- Note: only works for 5 days. If staying longer, register your laptop (directions on page)

Coffee!

- Coffee breaks: registration area at the auditorium entrance
- (Reception and Dinner: there aren't any)

Fermilab Taxi: 630-840-**4225**

Users' Center:

- Located in Fermilab Village (by the barn)
- Opens at 5 o'clock. Full Bar + pizzas, pool tables, …

Help

- **Registration:** Suzanne Weber (conf office)
  - **sweber@fnal.gov**
- **Travel & Lodging:** Olivia Vizcarra (theory secretary)
  - **olivia@fnal.gov**
- **Video Streaming:** Mu Chun Chen
  - **mcchen@fnal.gov**
- **Web page:** Jose Santiago
  - **jsantiag@fnal.gov**
  - **Please send your (electronic) talks to us in advance! (this will also help remote viewers) – mc4bsm@phys.ufl.edu**
- **Everything Else:** mc4bsm@phys.ufl.edu

Accelerator Tour!

- **Tour of accelerator system**
  - with Dave Vander Meulen (Fermilab, PBAR)
- **Tonite** at 6 o'clock:
  - Limit: 15 people
- **Sign up** in the next coffee break!
  - First come, first served
- We meet in the coffee area at 6 p.m.

Agenda

- Agenda:
  http://theory.fnal.gov/mc4bsm/agenda.html
  (electronic talks posted)

- Instant Messaging: to ask a question/comment:
  "stephenmrenna“ on aim.

- Live Stream:
  http://www-visualmedia.fnal.gov/live.htm
  (you need RealPlayer)