

Calendar

Thursday, September 7

2:30 p.m. Theoretical Physics Seminar - Curia II

Speaker: T. Becher, Fermilab WH-3NW

Title: Threshold Resummation in Momentum Space from Effective Field Theory

3:30 p.m. DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

4:00 p.m. Accelerator Physics and

Technology Seminar - Curia II

Speaker: J. Norem, Argonne National Laboratory

Title: RF Breakdown and High Gradient Limits

Friday, September 8

3:30 p.m. DIRECTOR'S COFFEE

BREAK - 2nd Flr X-over

4:00 p.m. Joint Experimental Theoretical Physics Seminar - 1 West

Speaker: L. Waters, Los Alamos National Laboratory

Title: Summary of the Hadronic Shower Simulation Workshop, and Further Hadronic Applications

[Click here](#) for a full calendar with links to additional information.

Weather



Slight Chance of T-Storms

81°/59°

[Extended Forecast](#)

[Weather at Fermilab](#)

Current Security Status

Wunderlich to manage DOE Chicago Office



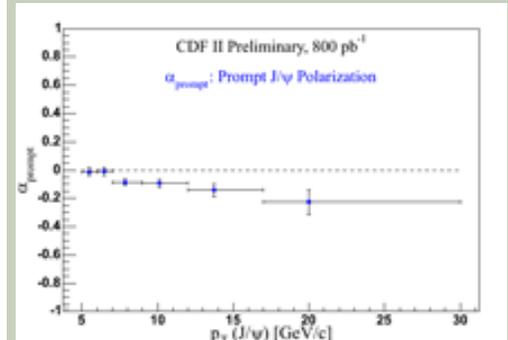
Bob Wunderlich says he looks forward to new challenges as the DOE Chicago Office manager.

In late August, former DOE Argonne Site Office manager Bob Wunderlich became the DOE Chicago Office manager. "The big difference is that the site office mission is to work directly with the laboratory to make sure the science can get done," said Wunderlich, who has worked for the federal government for 36 years, including some time as site office manager at Fermilab. "Here I see a wider set of issues."

The Chicago Office provides a broad range of support to the DOE site offices, including safety support, technical services, human resources, real estate services and legal staff. Along with the Oak Ridge Office, the DOE Chicago Office is one of two support hubs for the

Fermilab Result of the Week

A charming mystery



The spin orientation of the J/ψ in CDF data tends towards -1, meaning its spin is perpendicular to its line of flight.* (Click for larger version.)

Quantum chromodynamics has a hard time describing how charm-anticharm mesons (called " J/ψ " mesons) are made at the Tevatron. In the 1992-1996 Run I of the Tevatron, production of the J/ψ , an unstable particle which can be cleanly measured through its decay to two muons, was measured by CDF to be ten times larger than had been predicted. A new theory called NRQCD was developed to explain this phenomenon, but it only holds true if the spin of high transverse momentum J/ψ 's points in the same direction as their motion. Unfortunately, Run I didn't have enough data to measure this spin and confirm whether NRQCD had solved this production mystery.

Now with a Run II dataset of 1 million J/ψ events, and an excellent measurement of the muon acceptance from J/ψ decay, CDF has measured this J/ψ spin orientation with enough precision to test the theory. Including measurements for J/ψ 's with transverse momentum greater than 15 GeV/c, these tests probe deeply into the theoretical regime.

[Secon Level 3](#)**Wilson Hall Cafe****Thursday, September 7**

- Southwestern Chicken Tortilla
- Philly Style Cheese Steak
- Garlic Herb Roasted Pork
- Tomato Basil Chicken Parmesan
- Southwestern Turkey Wrap
- Assorted Slice Pizza
- Marinated Grilled Chicken Cesar Salads

[Wilson Hall Cafe Menu](#)**Chez Leon****Thursday, September 7****Dinner**

- Melon and Prosciutto
- Pork Tenderloin w/Madeira Sauce
- Vegetables of the Season
- Marzipan Cake

Wednesday, September 13**Lunch**

- Lebanese Kabob w/Pita
- Baba Ghannuj
- Hummus
- Tabbuli
- Baklava

[Chez Leon Menu](#)

Call x4598 to make your reservation.

Search**Search the Fermilab Today Archive****Info**

Office of Science's ten R&D labs. "The most important area that we are concentrating on is customer support, getting a better sense of the issues at each site office and trying to help solve them," said Wunderlich.

As the Chicago Office manager, Wunderlich has his work cut out for him. A year ago, the Office of Science restructured its organization. Wunderlich will now work with DOE Headquarters to manage an ongoing effort to re-engineer the site office systems--making certain DOE processes and standards are uniform. From electrical safety reviews to project management plans, Wunderlich will help determine which current systems are most effective, and which should be changed. Then he will automate each system to make them standard from lab to lab. "This process is time consuming, but worth it," he said. "Labs will have a clearer idea what DOE expects--which should make things easier on them."

And there's another, possibly bigger, challenge Wunderlich looks forward to: "Congress is talking about significant increases in funding [for the Office of Science over the next several years]," he said. "It will be our job to convince Congress that the Office of Science deserves the additional funding and we are producing the results that people expect to see."

--Siri Steiner

Molecular movies

The results disagree completely with NRQCD predictions. J/ψ mesons produced at high transverse momentum prefer a spin alignment perpendicular to their line of flight. This agrees with a different model for J/ψ production, inspired by the exchange of a hypothetical particle with no charge called a Pomeron. CDF is now measuring the spin orientation of the ψ' (excited $c\bar{c}$) and Y ($b\bar{b}$) mesons to see if the new theory continues to describe the data. If the results hold up, a new door will be open into understanding how these kinds of particles are produced in proton-proton or proton-antiproton interactions.



From left: Kwangzoo Chung, Min Jeong Kim, James Russ (all from Carnegie Mellon University).

*Graphic at top shows the spin orientation parameter α as a function of the transverse momentum (P_T) of the J/ψ meson. Mesons with spin aligned parallel/antiparallel to their line of flight have $\alpha = +1$, while those with perpendicular spins have $\alpha = -1$. Unpolarized mesons have $\alpha = 0$.

[Result of the Week Archive](#)**Announcements****NALWO Picnic**

NALWO will hold a fall picnic on September 15, from 5:30 to 8:00 p.m. just outside the Kuhn Barn. Meet friendly lab families and join us for an evening of supper and games. Children are welcome; each family gets a Fermilab Frisbee. Please bring food to grill, and a dish to share among 8 people, such as a casserole, salad or side dish. NALWO

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LCLS: When it starts up in 2009, SLAC's Linac Coherent Light Source will have a very cool feature: It will show tiny processes, like the breaking and forming of chemical bonds, in action. The LCLS x-ray will take images in rapid succession, and then use a method similar to the stop animation used in cartoons and old movies to bring them to life. [Watch live footage of LCLS construction.](#)

In the News

News In Science, September 6, 2006: Physicists charged over strange quarks

Scientists say they've solved a decade-old puzzle about the enigmatic 'strange quark', one of the fundamental building blocks of matter.

Their findings, published recently in the journal *Physical Review Letters*, help put our understanding of the universe on a more solid footing.

Associate Professor Derek Leinweber from the University of Adelaide and colleagues used a combination of supercomputing and physics to study the oddly named particle.

[Read More](#)

will provide charcoal grills, plates and cutlery, soft drinks and desserts. For additional information, contact the Housing Office, 630/840-3777 or housing@fnal.gov; Rose Moore, 630/208-9309 or Christiane Albrow, 630/717-8906.

Fermilab Folk Club Barn Dance

The Fermilab Folk Club Barn Dance season resumes Sunday, September 10 at 6:30 p.m. with music by Twisted Pair (Jennifer Jeffries and Paul Watkins) and calling by Dan Saathoff.

[More information](#)

International Folk Dancing

International Folk Dancing will meet Thursday, September 7, in Ramsey Auditorium in Wilson Hall. Dancing begins at 7:30 p.m. with teaching earlier in the evening and request dancing later on. Newcomers are welcome and you do not need to come with a partner. The group will return to Kuhn Barn beginning September 14. Info at 630-584-0825 or 630-840-8194 or folkdance@fnal.gov.

[Upcoming Activities](#)