

## Calendar

### Monday, January 23

**2:30 p.m.** Particle Astrophysics Seminar

- Curia II

Speaker: A. Mesinger, Columbia University

Title: Probing Reionization and Early Structure Formation

**3:30 p.m.** Director's Coffee Break - 2nd Flr X-Over

**4:00 p.m.** All Experimenters' Meeting - Curia II

Special Topic: CDF Upgrade Completion

### Tuesday, January 24

**3:30 p.m.** Director's Coffee Break - 2nd Flr X-Over

**4:00 p.m.** There will be no accelerator physics and technology seminar today.

## Weather



Partly Cloudy **31°/23°**

[Extended Forecast](#)

[Weather at Fermilab](#)

## Current Security Status

[Secou Level 3](#)

## Wilson Hall Cafe

## New Book by K.Y. Ng For Researchers, Grads



K.Y. Ng's book on beam instabilities was published this month.

Thousands of physicists would prefer smaller and more intense beams. But how small and how intense can you go before the beam becomes unstable? Instabilities inherently set the limit of beam intensity and particle bunch sizes, and impinge on many aspects of an accelerator's overall design. Physicist K. Y. "Bill" Ng's book, *Physics of Intensity Dependent Beam Instabilities*, which was recently published by World Scientific Publishing Co., addresses such issues. Ng, a Fermilab employee for over 25 years, decided to write the book after teaching in the U.S. Particle Accelerator School for several years. "I gave lectures on beam instabilities," said Ng. "The book expands on what I taught in the lectures."

Ng's book covers the most common density dependent beam instability problems for accelerators and discusses different solutions. He also

includes new types of instabilities found in collective beam densities and the

## Safety Tip of the Week

### Hierarchy of Controls



Local exhaust systems capture air contaminants before they can mix with room air. They are an isolation type control.

We often have a choice regarding the way a hazard will be addressed. Factors such as effectiveness, cost and schedule all need to be considered. A tool used by Environment, Safety, and Health (ES&H) professionals to help with effectiveness is called the *hierarchy of controls*. This approach provides a systematic way to consider control options in a way that ranks their effectiveness. The tool includes four different ways to separate hazards and targets, where a target is a person or thing that the hazard would harm. In order of decreasing effectiveness, there are four possible types of control:

**Substitution** - Can the work be done without the hazard being present? Can a less hazardous component be used? Obviously, eliminating the hazard is best.

**Isolation** - Can the hazard be physically isolated so the target cannot be harmed? Physical barriers are a good solution. However, barriers can be damaged or removed.

**Monday, January 23**

- Potato Au Gratin
- Monte Cristo
- Savory Roasted Chicken Quarters
- Lasagna Bolognaise
- Chicken Ranch Wrapper
- Assorted Pizza Slices
- Szechuan Style Pork Lo Mein

The Wilson Hall Cafe accepts Visa, Master Card, Discover and American Express.

[Wilson Hall Cafe Menu](#)

**Chez Leon****Wednesday, January 25****Lunch**

- Poached Salmon with Scallion Sauce
- Vegetable Medley
- Long Grain Rice
- Yogurt Cake with Raspberry Sauce

**Thursday, January 26****Dinner**

- French Onion Soup
- Grilled Swordfish with Tomato White Butter Sauce
- Broccoli with Lemon Zest
- Saffron Rice
- Marzipan with Chocolate Sauce

[Chez Leon Menu](#)

Call x4512 to make your reservation.

**Search**

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**Info**

K.Y. "Bill" Ng

diagnostics to recognize and solve them as well. "The topic is important nowadays because people are building machines with higher density beams. The higher the density, the easier it is for beams to be unstable," explained Ng, referring in particular to the proposed International Linear Collider (ILC). "I'll be looking at beam dynamics issues for the ILC. Recently, I'm working on something called electron cloud effect, which happens when a damping ring is filled with positrons."

*Physics of Intensity Dependent Beam Instabilities* is geared toward both researchers and graduate students in accelerator physics. More details on the book can be found at the [publisher's Website](#).

—Dawn Stanton

**In the News**

### From *PPARC* Press Release, January 18, 2006: World's Largest Telescope

European funding has now been agreed to start designing the world's largest telescope. The "Square Kilometre Array" (SKA) will be an international radio telescope with a collecting area of one million square metres - equivalent to about 200 football pitches - making SKA 200 times bigger than the University of Manchester's Lovell Telescope at Jodrell Bank and so the largest radio telescope ever constructed. Such a telescope would be so sensitive that it could detect TV Broadcasts coming from the nearest stars.

Procedures - Is there a way to do the job such that the hazard and target will not meet? Procedures are OK, but are heavily reliant on behavior.

Protective equipment - Can the target be provided with a barrier or warning device so that harm can be avoided? Protective equipment is generally viewed as the weakest alternative because its effectiveness depends on equipment functioning as well as reliable behavior.

The establishment of ES&H controls is just one mechanism to ensure the safety of Fermilab workers. Pre-job hazard analysis and planning is vital to the establishment of adequate controls, as is worker training and briefing.

[Safety Tip of the Week Archive](#)

**Accelerator Update****January 18 - 20**

- Tevatron still down for vacuum repairs.

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)

[View the Tevatron Luminosity Charts](#)

**Announcements**

#### Lederman Science Center Closed to Public

The Lederman center is closed to the public today due to a water shutdown that resulted from flooding.

**Summer Housing Requests**

The Fermilab Housing Office is now taking requests for houses, apartments, and dormitory rooms for the summer of 2006. Since there will be a large influx of experimenters, and requests are anticipated to be in excess of our

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The four-year Square Kilometre Array Design Study (SKADS) will bring together European and international astronomers to formulate and agree the most effective design. The final design will enable the SKA to probe the cosmos in unprecedented detail, answering fundamental questions about the Universe, such as "what is dark energy?" and "how did the structure we see in galaxies today actually form?".

The new telescope will test Einstein's General Theory of Relativity to the limit - and perhaps prove it wrong. It is certain to add to the long list of fundamental discoveries already made by radio astronomers including quasars, pulsars and the radiation left over from the Big Bang. By the end of this decade the design will be complete and astronomers anticipate building SKA in stages, leading to completion and full operation in 2020.

[Read More](#)

available facilities, you are urged to submit your request for reservations to the Housing Office by Wednesday, March 1, 2006. Requests can be made for any period and need not commence on any particular date. For further information, please call (630) 840-3777 or email [housing@fnal.gov](mailto:housing@fnal.gov). Individual housing requests can be made by using our [online housing request form](#). (Requests for multiple housing units are best handled by direct email.)

### **Pheasant Run Outing**

The Fermilab Recreation Office offers an adult outing with buffet dinner and theater. Pheasant Run Resort & Spa presents "Accomplice" by Rupert Holmes, Saturday, March 4. The price of \$35.00/person includes the dinner buffet and theater, taxes and gratuity. Call or stop by the Recreation Office x5427, x2548 to pick up a brochure and registration form. Deadline is February 17. More information can be found on the [Recreation Web page](#).

### **[Upcoming Activities](#)**