24th NIST Computer Modeling Workshop sponsored by RILEM and in cooperation with ASTM Committees C01 and C09

DATE and LOCATION

Monday August 12, 2013 to Tuesday August 13, 2013
Lecture Room B, Building 101
National Institute of Standards and Technology
Gaithersburg, Maryland 20899 USA

INSTRUCTORS

Jeff Bullard (coordinator), Dale Bentz, Chiara Ferraris, Edward Garboczi, Nicos Martys, Paul Stutzman, NIST Materials and Structural Systems Division
John Henry Scott, NIST Materials Measurement Science Division
Gaurav Sant, UCLA

GENERAL DESCRIPTION

The workshop lectures will cover computational and experimental materials science of concrete topics, including simulation of microstructural development and prediction of physical properties. "Microstructure" ranges from nanometer to meter length scales, while physical properties include pressure-driven fluid flow, rheology, mechanical properties, neutron scattering, scanning electron microscopy, and various X-radiation probes like diffraction and tomography. Close cooperation between computation and experiment is crucial for making progress in the materials science of concrete and so is an emphasis of the workshop. The workshop will have a mix of tutorial lectures and short 15-minute talks by the participants describing their technical work.

Information on registering for the workshop, finding local hotels, and transportation to and from NIST can be found on the last page of this schedule.

WORKSHOP SCHEDULE

MONDAY August 12, 2013 Lecture Room B, Administration Building

9:30-9:45 Welcome and Orientation — Jeff Bullard

9:45-10:30 Lecture No. 1 — Ed Garboczi
Principles of modeling cement and concrete

10:30-11:30 Lecture No. 2 — Paul Stutzman
Microstructure in portland cement paste and concrete

11:30-12:30 Lunch, NIST Cafeteria

12:30-1:15 Workshop Participant Presentations (3)

1:15-2:15 Lecture No. 3 — Chiara Ferraris
Experimental rheology of cement, mortar and concrete

2:15-3:15 Lecture No. 4 — Nicos Martys
Computational rheology of cement, mortar and concrete

3:15-3:30 Break

3:30-4:30 Lecture No. 5 — John Henry Scott
Characterizing dynamic phenomena at material interfaces

4:30-5:00 Workshop Participants Presentations (2)

TUESDAY August 13, 2012 Lecture Room B, Administration Building

9:00-10:00 Lecture No. 6 — Gaurav Sant
Vertical Scanning Interferometry (VSI): A New Method to Measure the Dissolution Dynamics of Cementitious Minerals

10:00-10:15 Break

10:15-11:15 Lecture No. 7 — Jeff Bullard
Simulating early-age reaction and transport in hydrating cement pastes

11:15-12:00 Workshop Participants Presentations (3)

12:00-1:00 Lunch, NIST Cafeteria

1:15-2:00 Lecture No. 8 Jeff Bullard
Late-age hydration and microstructure modeling with thermodynamics s

2:00-2:45 Lecture No. 9 Dale Bentz
Sustainable concrete materials: experiments and modeling

2:45-3:00 Break

3:00-4:30 **VCCTL Software Tutorial** Jeff Bullard

Registration

The list of workshop participants will be finalized by **August 2, 2013**, which is the registration deadline. There is a $20 registration fee. On-line registration is available at the workshop website http://www.nist.gov/el/building_materials/modeling-workshop.cfm (**Note:** On some PDF readers, clicking on this link may not work, but typing in the address manually in the web browser will take you to the workshop website).

Housing and Meals

A partial list of hotels near NIST is available on the workshop website. Many of these hotels offer shuttle services to and from NIST. Participants are also encouraged to use their favorite travel websites to search for special rates or other accommodations. Workshop participants are responsible for the costs of meals.

Getting to NIST

See the following web site for detailed information about getting to NIST (e.g., taxis, shuttles, restaurants) –http://www.nist.gov/public_affairs/visitor/visitor.htm. If workshop participants land in Dulles International Airport, a taxi can be taken directly to the Gaithersburg Holiday Inn at a cost of about $70.00. Those persons flying into Reagan National Airport can take the Metro underground train directly to the Shady Grove stop in Gaithersburg (about $3-$6, depending on time of day—see signs in Airport station--Yellow line to Gallery Place, Red line to Shady Grove). A taxi may be taken from there to the Gaithersburg for about $15.00. Alternatively, a taxi can be taken directly to the hotel from Reagan National for about $65.00. From Baltimore Washington International Airport, taxis cost about $90.00 to Gaithersburg. Shuttles are somewhat cheaper – see the airport web site for details. Driving directions to NIST are included on the NIST web site.

Security

All workshop attendees must have a picture I.D. with them to be able to enter the gates, either riding on the bus from Holiday Inn or by themselves. A U.S. driver's license or passport is fine. A temporary NIST badge will be given to you on your first entrance to NIST, which, along with your picture I.D., will allow entrance into NIST for the rest of the workshop. So don't throw it away! And please wear the NIST badge at all times while within NIST.

Note: Non-US citizens are required to give some additional information. You will see a place for this on the on-line registration, and on the form below.

Please direct all questions to the Workshop coordinator:
Jeffrey W. Bullard (bullard@nist.gov)
NIST, 100 Bureau Drive, Stop 8615, Gaithersburg, MD 20899-8615 USA
Phone: (301) 975-5725 (office), (301) 990-6891 (fax)