

## OPENFRESKO ADMINISTRATOR AND DEVELOPER WORKSHOP

Saturday, Feb. 23, 2008

UC Berkeley, Richmond Field Station, Room 19 in Building 451

The topics covered in the [OpenFresco Administrator/Developer Workshop](#) are of great interest to site system administrators and technical staff, intermediate and advanced HS researchers interested in capitalizing on the capabilities of OpenFresco to conduct complex tests, and for developers interested in extending OpenFresco's capabilities or pairing OpenFresco to new FE software applications and laboratory control and DAQ equipment. The topics to be addressed are:

- *How do I install OpenFresco at my site and link it to my site's equipment and software?* You will be shown how to take advantage of the available self-installer for standard installations, as well as how to install and update the source code when you modify, extend or develop new OpenFresco capabilities.
- *OpenFresco is object oriented, but how do I find the various modules so I can understand more fully what they do or modify them?* The architecture used by OpenFresco will be described and ability to link to different user-defined module demonstrated.
- *What do each of the OpenFresco objects do and what are the requirements for changing them so they all still work together?* Detailed discussions will prepare you to work with and modify the various OpenFresco commands important for conducting a hybrid simulation, such as expElement, expSite, expSetup, and expControl.
- *I know OpenFresco already works with LS-Dyna, Matlab, OpenSees, and SimCor, but users want to use other computer programs. One of my faculty members wants to use her finite element software to carry out a hybrid test. How do they do this?* Discussions regarding the OpenFresco GenericClient element will allow you to conduct hybrid simulations using most computer software that permits the addition of user-defined elements or provides a API.
- *Our lab uses specialized control equipment, and it may not work with OpenFresco. One of my investigators wants to implement a new form of hybrid testing. Is there something I can do to make these specialized connections?* OpenFresco already works with a wide variety of control and DAQ hardware. However, specialized linkages to equipment can be easily be implemented by modifying the expControl object. These will be discussed and demonstrated.
- *Some of our staff and users are experts and want to develop their own applications, incorporating special software features not currently available. They want to use the OpenFresco middleware as the foundation for their new applications. How can they do this?* The experimental object interfaces will be described so that OpenFresco can be easily extended.
- *Can I try this out?* Participants will undertake a hands-on exercise to give them practice in using OpenFresco.
- *What's in the works?* The workshop provides an opportunity for you to see what's currently on the drawing board, and make suggestions for future capabilities.
- *What are other people doing with OpenFresco?* Several researchers using OpenFresco will make presentations.

## Tentative Schedule

8:30 – 9:00 am	<b>Breakfast</b>	
9:00 – 9:15 am	Welcome and Goals of the Workshop	S. Mahin
9:15 – 10:30 am	Installing OpenFresco	H. Kim
10:30 – 10:45 am	<b>Coffee Break</b>	
10:45 – 12:00 pm	OpenFresco Software Architecture and Tcl-Commands	A. Schellenberg
12:00 – 12:45 pm	<b>Lunch</b>	
12:45 – 1:45 pm	Hands-on Exercise in Developing and Running a Hybrid Simulation	C. Whyte
1:45 – 2:45 pm	Extending OpenFresco: Experimental Class APIs	A. Schellenberg V. Terzic
2:45 – 3:00 pm	<b>Coffee Break</b>	
3:00 – 3:40 pm	Interfacing with other FE-Software: Generic Client Element	H. Kim
3:40 – 4:40 pm	Experiences and Requirements by OpenFresco Users	S. You G. Mosqueda
4:40 – 5:15 pm	Discussion Session: Future Directions and Capabilities	S. Mahin
5:15 – 5:30 pm	Closing Remarks	G. Fenves S. Mahin

### Suggested Hardware and Software to Bring to the Workshop:

1. Laptop with Windows XP or later.
2. MS Visual C++ 2005.

### Instructor Information:

**Stephen Mahin**, Byron L. and Elvira E. Nishkian Professor of Structural Engineering  
(mahin@berkeley.edu)

**Andreas Schellenberg**, Ph.D. Candidate (andreas.schellenberg@gmx.net)

**Hong Kim**, Graduate Student (hongkim@ce.berkeley.edu)

**Catherine Whyte**, Graduate Student (cwhyte@berkeley.edu)

**Vesna Terzic**, Graduate Student (vesna@berkeley.edu)

**Gregory Fenves**, T.Y. and Margaret Lin Professor of Engineering (fenves@berkeley.edu)