

ACI-ASCE Committee 447
Finite Element Analysis of Reinforced Concrete Structures
Meeting at Room C-103D, Convention Center, Milwaukee, WI
04/18/2016 11:00 am - 1:30 pm
ACI Spring 2016 Convention

1. Call to Order and Introduction of Members and Guests

Meeting called to order at 11:00 am.

Members present: Mohammod Alnaggar, Matthew Bandelt, Zdenek Bazant, Allan Bommer, Mi Geum Chorzepa, Gianluca Cusatis, Mukti L. Das, Jason Draper, James Deaton, Robert Esplin, Serhan Guner, Trevor Hrynyk, Ioannis Koutromanos, Laura Lowes, Michael Mitchell, Yi-Lung Mo, Abbas Mokhtar-Zadeh, Michael O'Leary, Hadi Razavi, Guillermo Alberto Riveros, Victor Saouma, Ali Semendary, Brian (BJ) Siljenberg, Sri Sritharan, Roman Wendner, Jian Zhao, and Ganesh Thiagarajan (Chair)

Members absent: Riadh Al-Mahaidi, Gangolu Appa Rao, Ashraf Ayoub, Sarah Billington, In Ho Cho, Chris Conley, Carlos Coronado, Jeffrey Dragovich, Heshan Elemam, Ayman El-Zohaivy, Anthony Ingrassia, John Jakovich, Feng-Bao Lin, Zhibin Lin, Yong Lu, Kyle Marshall, Christian Meyer, Cris Moen, Wassim Naguib, Dan Palermo, Marios Panagiotou, Syed Rahman Mahmudveza Soltani, Mohammad Sharafbayani, Hazim Sharhan, and Jan Song.

Guests: JR Mujagic, Abadallah Alhmoode, Hoankee Kim, Becca Rembert, Roberto Leon, Gerhard Via, Bill Brant, Curt Decker, Andy Taylor (TAC Contact)

2. Excused absences

None

3. Review and approve minutes from previous meeting: ACI Fall 2015 Denver, CO convention.

Motion to approve the minutes for ACI Fall 2015 Denver, CO. (Bommer and Guner)
The motion passed unanimously.

4. Review of ACI 447 Mission

The committee discussed the mission of the committee. Updates should be sent to the Chair.

5. Membership update

Voting members: 29; Associate members: 46; Consulting members: 18.

- Associate members who are intended to be promoted to voting members, please send an email to the chair.
- Voting members were urged to cast vote and show their opinions about the documents the committee is work on.

6. Report on possible technical sessions/Special Publications to be sponsored by the committee:

- a. **Koutramanos/Cusatis:** "Development of guidelines for the calibration and validation

of concrete models," Session in collaboration with ACI-446 on Calibration of Concrete Models.

Koutramanos updated on the sessions, which are included in this convention.

Cusatis discussed future sessions in this direction.

- b. **Special Publication** – based on ‘Blast Blind Prediction Contest cosponsored by ACI-370 (Thiagarajan).

Ganesh reported the progress of the special publication.

- c. **Future sessions to be organized**

- Session on "simulation of the concrete wall behavior subjected to seismic loading." (Sritharan and Lowes). The sessions will be requested for Fall 2016 convention in Philadelphia, PA.

Sritharan updated the session preparation. Initial request has been submitted pending approval. Members who are interested in presenting, please send an abstract to Dr. Sritharan or Dr. Lowes.

- Session on "Impact of Finite Element Methods in Concrete Design." (Thiagarajan and Mokhtar-Zadeh) for ASCE 2017 Structures Congress.

Members who are interested in presenting their work, please send an abstract to Dr. Thiagarajan before May 15, 2016.

7. Update on State-of-the-Art Reports

- a. **NESCC** – Concrete Task Group (CTG) Report: Post-Processing Finite Element Analysis Results for the Design of Nuclear Concrete Structures (447.YT)

O’Leary updated on the document preparation. Post-processing and result interpretation is important for practitioners to use finite element analyses.

- b. **Al-Mahaidi**: Modeling for the Repair and Rehabilitation of Modern Concrete Structures for Performance Based Design (447.ZR)

Thiagarajan reported the progress of the document.

- c. **Ayoub/Guner**: Modeling of Modern Concrete Structures for Performance-Based Earthquake Engineering (447.XR)

This item was not discussed.

- d. **Sritharan/Zhao**: State-of-the-art report on modeling bond in reinforced concrete (447.YR)

Zhao and Sritharan updated the progress on the report (Chapter 4 mostly completed).

8. Twisting Moments in Finite Element Based Design of Reinforced Concrete Slabs

(Allan Bommer)

- Bommer updated the committee on the document and the letter ballot results.
- The focus of the report is on the interpolation of analysis results rather than how to get the results through finite element analyses. The committee agreed with the current focus, and provided suggestions to clearly define that in the revised document.
- The committee members who voted negative were encouraged to discuss their negative ballots with Bommer.
- The document will be re-balloted, and committee members were urged to use the proper format to facilitate the revision.
- The document was changed to “Guide to considering twisting moment in design of slabs and other components.”

9. Webinars on Finite Elements for Engineers

- The committee discussed the webinar preparation, including the focus of the webinars. The committee provided comments. The topic will be further discussed in Fall 2016 convention in Philadelphia, PA.
- Draper and Mokhtar-Zadeh will assist with the webinar preparation.
- The committee agreed that there should be three webinars in a series (Mokhtar-Zadeh).
- A checklist is needed for using finite element analyses and checking finite element models. Deaton and Lowes will contribute to the development of the checklist.

10. New Business/Adjourn

- Lowes explained a solicitation on using finite element analyses to support structural design. Published references are needed to assist with the code language development, currently on-going at ACI Committee 318.
- The committee discussed the subject.
- Committee members with such information are encouraged to contact Lowes.

Meeting adjourned at 1:30 pm.

Respectfully submitted by Jian Zhao (secretary)