

**Soil Properties and Modeling (SP&M) Committee
Geo-Institute, American Society of Civil Engineers
Memorandum**

To: Soil Properties and Modeling (SP&M) Committee Members
From: Michelle Barry, Vice Chair, and Brina Montoya, Chair
Date: Monday, December 14, 2020 11:00 AM – 12:00 PM ET
Re: Committee Meeting Minutes from Monday, December 14, 2020 Fall Committee Teleconference

Committee Meeting Minutes

Call to Order, 11:02 AM ET (Montoya)

1. Welcome and Introductions (Montoya)

Members attending:

Brina Montoya, Michelle Barry, Nick Hudyma (TCC), Mustafa Al Saleh, Khalid Alshibli, Chris Baxter, Ryan Beemer, Giuseppe Buscarnera, Mike Coryell, Sheng Dai, Don DeGroot, Mandar Dewoolkar, Matt Evans, Aaron Gallant, Mike Gomez, Laureano Hoyos, Pao-Tsung Huang, Yazen Khasawneh, Melissa Landon, Hai Lin, Bret Lingwall, Balasingam Muhunthan, Kanthasamy Muraleetharan, Nadarajah Ravichandran, Richard Regueiro, Marika Santagata, Karl Schwartz, Radhey Sharma, Cumaraswamy Vipulanandan, Jeong Yun Won, Yao Zhang, Hamza Jaffal, Nariman Mahabadi, Kenichi Soga, Mohab Sabry, Nutan Palla, Victor Kaliakin

2. Approval of Meeting Minutes from February 2020 meeting (minutes attached to this document)

Motion to approve (Santagata), second (DeGroot) – approved by all at 11:14 AM

3. Introduction of ISSMGE TC105, Geo-Mechanics from Micro to Macro (Soga)

- Promote DEM, encourage micro-structural understanding of sands and clays, open up discussion on the use of micro-structural measurements (see website: <http://issmge.org/committees/technical-committees/fundamentals/geo-mechanics>)
- Plan to interact more with SP&M
- Regular meetings, conferences and events going on, round robin study worldwide with DEM & 3D printed particles, TC105 Micro-to-Macro Blog, News
- Share with Kenichi anything you would like posted on the blog or website
- Join as a corresponding member if interested in being a part of TC105, please send a request to Jim Hanson jahanson@calpoly.edu of CalPoly, who leads the Geoinstitute's International Activities. He will then nominate you to ISSMGE (that is all you need to do!).
- Update requested for ISSMGE Atlanta papers, more information to follow...
- Slides from presentation attached to this document

4. TCC Updates (Hudyma provided updates listed and discussed by Montoya)

4.1. TCC Special Projects Program

4.1.1. Thank you for submitting a proposal to the Special Projects Program. This year, there were:

- Six GeoTechTools (GTT) proposals submitted (3 were funded). Reviews were conducted by GTT personnel.
- Three DIGGS proposals submitted (1 was funded). Reviews were conducted by a subset of the TCC.
- Four Committee Initiated proposals submitted (2 were funded). Reviews were conducted by a subset of the TCC.

4.1.2. Your proposal was very well received by the GeoTechTools review committee. You are strongly encouraged to re-submit next year.

4.2. Virtual Speakers Series

TCC putting effort towards this series – (Nick) “I would encourage the SPM committee to contribute a list of speakers and topics to the Virtual Speakers Series. The TCC is developing a list of speakers and topics from technical committees for distribution to local GI Chapters via the Local Involvement Committee.”

Please share presentations that you might have given to your local chapters or be interested in giving in the future.

4.3. Annual Report

“Thank you for submitting your annual committee report. The TCC will provide feedback before or during the IFCEE 2021 meeting.”

5. G-I and ASCE Awards

5.1. Awards Subcommittee

5.1.1. New subcommittee consists of Mike Coryell (chair), Mustafa Al Saleh and Alejandro Martinez (more volunteers welcome)

- Focused on finding and nominating papers for the various ASCE awards

5.1.2. Subcommittee will begin reviewing papers and soliciting input from committee for paper awards in July; see committee guidelines on our committee website:

<https://www.geoinstitute.org/committees/technical-committees/soil-properties-and-modeling/subcommittees-and-initiatives>

- Please send any papers you think deserve an award to the subcommittee so that they can be made aware
- Subcommittee will also be asking members for suggestions in June

5.2. Individual Awards

5.2.1. The committee led the nomination, in conjunction with the Unsaturated Soil Mechanics Committee, of Giuseppe Buscarnera for the Huber award. Currently awaiting announcement of recipient.

5.2.2. The committee co-sponsored the nomination of Ning Lu for The Karl Terzaghi Award in May 2020 with the Unsaturated Soil Mechanics Committee. Currently awaiting announcement of recipient.

5.2.3. I encourage everyone to think of colleagues worthy of nomination for ASCE Awards: <https://www.geoinstitute.org/about-us/awards>

- Please be thinking over the next few weeks and prepare to nominate them in January. Email nominations to Brina directly.
- Following the committee guidelines (link below), we would like to get started on the nomination process early in the new year.

<https://www.geoinstitute.org/committees/technical-committees/soil-properties-and-modeling/subcommittees-and-initiatives>

6. Update from Special Projects Subcommittee (Lin)

6.1. This year's special project proposal needed to be a larger effort (~\$10k/project). The GI also had hopes of projects enhancing GeoTechTools or DIGGS.

6.2. Proposed Project for 2020 (Lin & Montoya): "Solidifying" Bio-mediated Soil Improvement in GeoTech Tools

- Currently very little information on bio-mediated soil implementation/improvement in GTT

6.2.2. Project objectives included thoroughly characterizing bio-mediated soil improvement into GeoTechTools to expand the dissemination of the technologies to practitioners and potentially lead to new applications

6.2.3. Two-year project, \$10,000 budget (support student time)

6.2.4. Project chaired by Hai Lin, and advisory subcommittee consisted of: Jason DeJong, Leon van Paassen, Michael Gomez, Alejandro Martinez, and Brina Montoya

6.2.5. This proposal was well reviewed, but was not chosen for funding. Similar efforts will be expected for next year's funding cycle, so please be thinking of projects now. The committee can submit more than one.

- More than one project proposal can be submitted in the same or different funding avenues

6.3. Past Special Project (Barry & Khasawneh)

Objective of project: provide a series of lectures, geared towards practitioners and students, on the characterization of soil properties and modeling of their associated uncertainty.

- Will be contacting members to get input and help with presentations

6.3.2. Discussion of draft presentations

- Presentations developed by committee members have been modified towards a standard committee template
- Discussion of draft presentations and what is needed - difficult to make "general" presentations and so we have decided to make a main template and then get help from members to customize it in several different directions
- Be looking for emails from Michelle or Yazen for help with small sections of the presentations

- Google Form will be circulated to get member contact info, expertise, and presentation preferences

6.3.3. Volunteers for disseminating presentations

- Google form will be used to help communicate with local chapters available expertise and presentation options
- Opportunity to network while providing service to the community through this project

7. New Initiative from the G-I, “The Big Question” Web Show (Montoya)

From Brad Keelor:

I would like to start another web show. It will be called “The Big Question,” and every episode will address a key concept of geotechnical engineering. The possibilities are almost endless – it could be about an equation, it could be about something broad like the basic principles of rock mechanics, it could be about the development of a new technology that’s impacting the field, or anything, really. Every episode will be quick – 5-7 minutes (and I mean 5-7 minutes, not 10ish or 12:11 or whatever – this won’t work if these are too long). I am hoping to start this out by having every technical committee do one episode. Please think about what question you would like to address and who will be your lucky presenter. Once you have those in mind, let me/us know, and we will schedule a recording for you. I would love to post 2 of these every month, but if it’s going great and you guys are cranking them out we could do it every week. Thanks for your consideration – first idea will get first dibs on recording, second will go second, etc.

7.1. Short (5-7 min) web episodes addressing a key concept of geotechnical engineering

7.2. Every technical committee will be asked to do at least one episode

- Brad has only had one committee volunteer so far and will contact folks/committees directly
- G-I will help with editing, processing, etc.

7.3. Solicitation of “Big Questions” (and volunteers for presenter)

- Potential for nice exposure and spotlight for those going up for tenure (Beemer)
- Students might be a good group to go to for this since they are good at these types of videos and have good ideas (Santagata)
- Discussion of Micro-Macro idea showing CT scans and particle imaging up to DEM modeling (Beemer) - Khalid offers to provide some CT information and help, Kenichi offers to pull content together and pull from blog, Ryan can contribute scans of calcareous sands, Mustafa to provide examples of DEM studies
- Question of what audience looks like (Vipulanandan, Montoya) – diverse audience from students, academics, to practitioners, can tailor to a subset of the audience or we can focus on a broad audience
- Discussion of how it would be nice to define, what the big question is - (Muraleetharan)
- Suggestion to expand idea more to ignite imagination (Pestana) – behavior of submarine soils, terrestrial soils, to extra-terrestrial soils and integrate rocks, etc, can explore projects like wind farms, excavations in rock, and other unique aspects of soil behavior, discussion that this can be another idea

- Talk to Brina if you are interested or have students interested in being a part of the videos, subcommittees can be formed to work on these

8. Committee Website (Lin & Montoya)

8.1. Our new website is up and running:

<https://www.geoinstitute.org/committees/technical-committees/soil-properties-and-modeling>

- Committee roster with member names are added and listed on the site
- “Ready, Set, Remote” panel information and discussion is posted
- Nomination guidelines/process documents are posted
- News and events are also posted

8.2. We look to the committee to populate the website with News and Events

8.2.1. We have 35+ people signed up to receive our committee news, so it’s another avenue to reach an audience for events, news, etc. Please contact Brina or Hai Lin (hailin1@lsu.edu) to add new and events to the website

9. Upcoming transition of leadership (Montoya)

9.1. Michelle will become Chair in June 2021, and the election of the Vice Chair will take place at IFCEE 2021 (according to committee-established procedure; attached to the end of this agenda for reference).

9.2. Nominations for Vice Chair will open beginning of May (at least one week prior to IFCEE 2021).

9.3. Please be thinking of nominations (including self-nominations) for our next Vice Chair.

9.4. Voting will take place virtually/electronically (e.g., Qualtrics)

10. Recent Committee Activity

10.1. Ready, Set, Remote! Lessons Learned During the 2020 Transition to Online Learning (Santagata, Evans)

10.1.1. Survey disseminated through USUCGER, which provided insight and helped shape panel

10.1.2. Virtual Panel held over summer, with support from G-I (facilitated YouTube Live)

- 6 panelists (5 geotech faculty and 1 engineering education faculty member from Purdue)

10.1.3. Interest from community at large to continue the discussion; if interested in participating in future events, please contact Brina Montoya, Michelle Barry, Marika Santagata, or Matt Evans

11. Upcoming Committee Activity

- 11.1. Special issue of the ASTM Geotechnical Testing Journal on *Advances in Laboratory Experimentation for Unsaturated Soils*, will be published in early 2021 (Hoyos)
 - 11.1.1. SPM committee members have served as reviewers
 - 11.1.2. Received 42 abstracts, and 24 invited as full papers; 18 accepted for special issue
- 11.2. Sessions for IFCEE 2021
 - 11.2.1. Session on developing soil properties for deep foundation design (Coryell)
 - 11.2.2. Session on foundations for energy harvesting systems (Khasawneh)
 - 11.2.3. Emerging topics in geotechnical engineering (Martinez and Nafisi)
- 11.3. International Symposium of Frontiers in Offshore Geotechnics (ISFOG) (Beemer)
 - 11.3.1. In Austin in November, papers have already been published
- 11.4. EMI 2020 → EMI 2021 / PMC 2021
 - 11.4.1. Fully virtual, in May
- 11.5. Geo-Extreme 2021
- 11.6. Others?

12. Updates from Other Committees

- 12.1. n/a

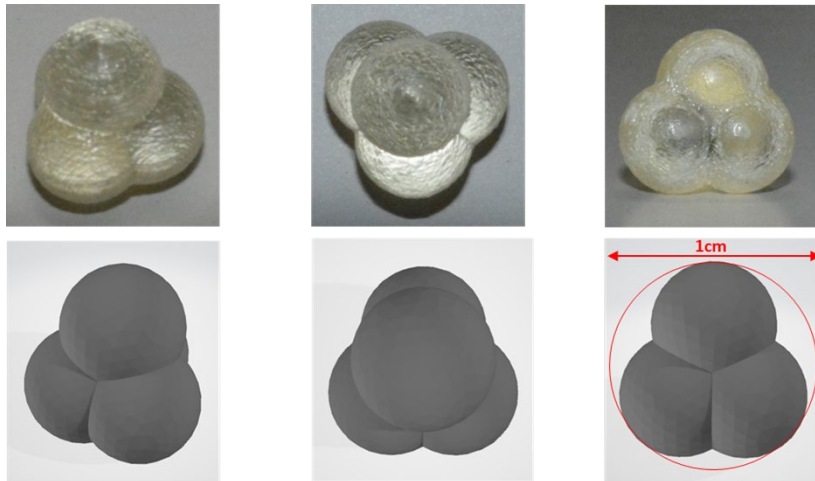
13. Other Business

- 13.1. In Unsaturated committee, been successful with webinars. We can use our “special projects” presentations (and others) for the webinars through ASCE.
- 13.2. Presenters do get paid
- 13.3. Can leverage our members from industry and spot light high-end modeling

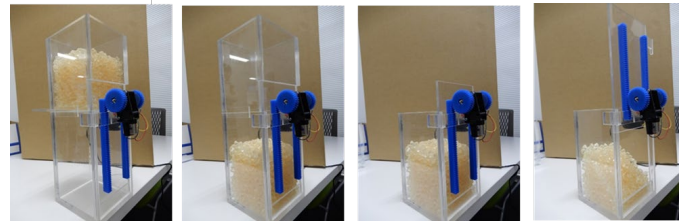
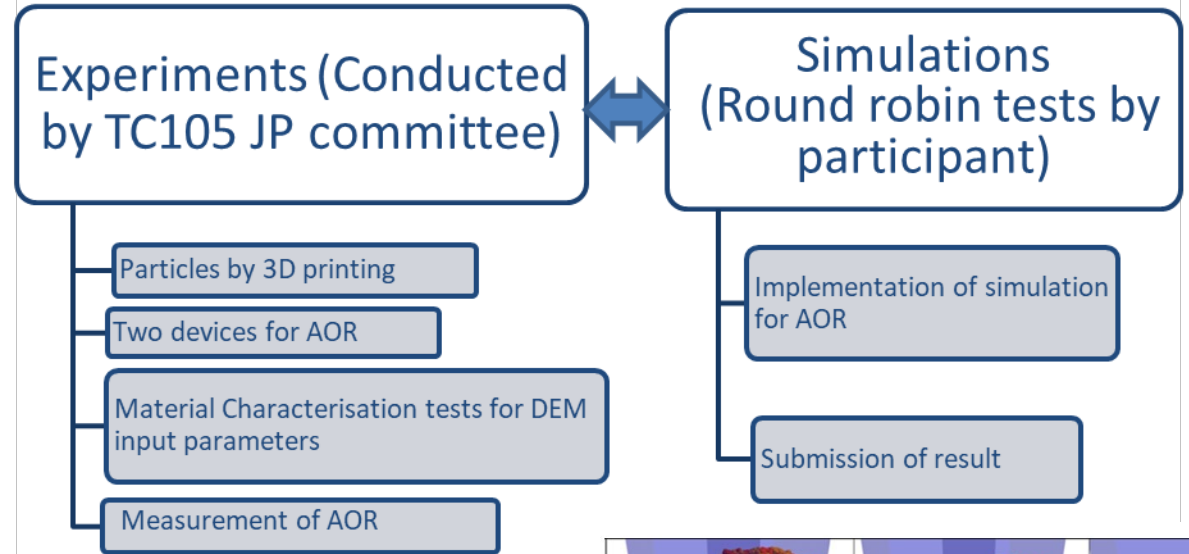
14. Adjourn 12:20 PM ET

- Regular meetings including lecture and discussion
 - Pierre Delage (Paris Tech) “Micro-to-Macro of Clays”
 - Tom Shire (University of Glasgow) “Modelling widely graded soils: challenges addressed and insight gained”
- TC105 named lecture – “ISSMGE Micro to Macro Honour Lecture”
- IS Grenoble – 2023, Previously IS-Atlanta 2018, IS-Cambridge 2014, etc.
- TC105 sessions in ICSMGE Sydney (Sept 2021) – Visit Itai Einav’s lab and have fun!
- TC105 DEM round robin test - <http://geotech.civil.yamaguchi-u.ac.jp/tc105/>
- TC105 Micro-to-Macro blog - <https://m2m.home.blog/>
 - Twitter - https://twitter.com/tc_micro2macro
- News - <https://www.issmge.org/committees/technical-committees/fundamentals/geo-mechanics>
- Membership drive

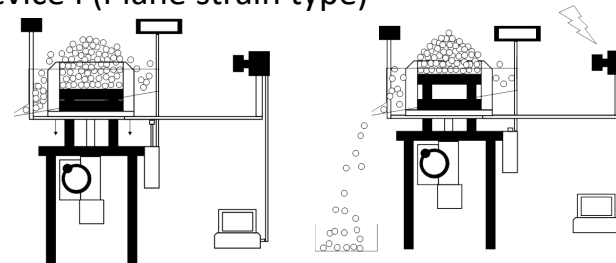
Report of Round Robin test activities



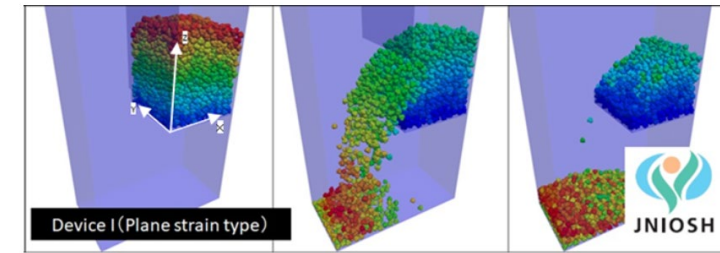
3D printed particles



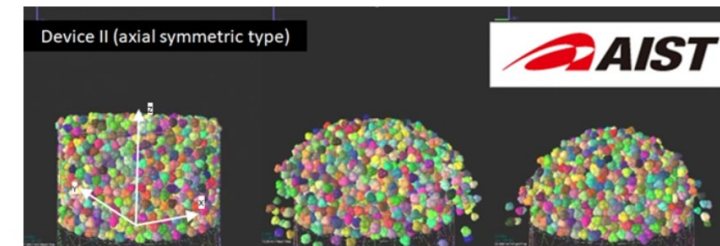
Device I (Plane strain type)



Device II (Axial symmetric type)



Feasibility simulation by Dr. Naotaka Kikkawa (JNIOSH, Japan)

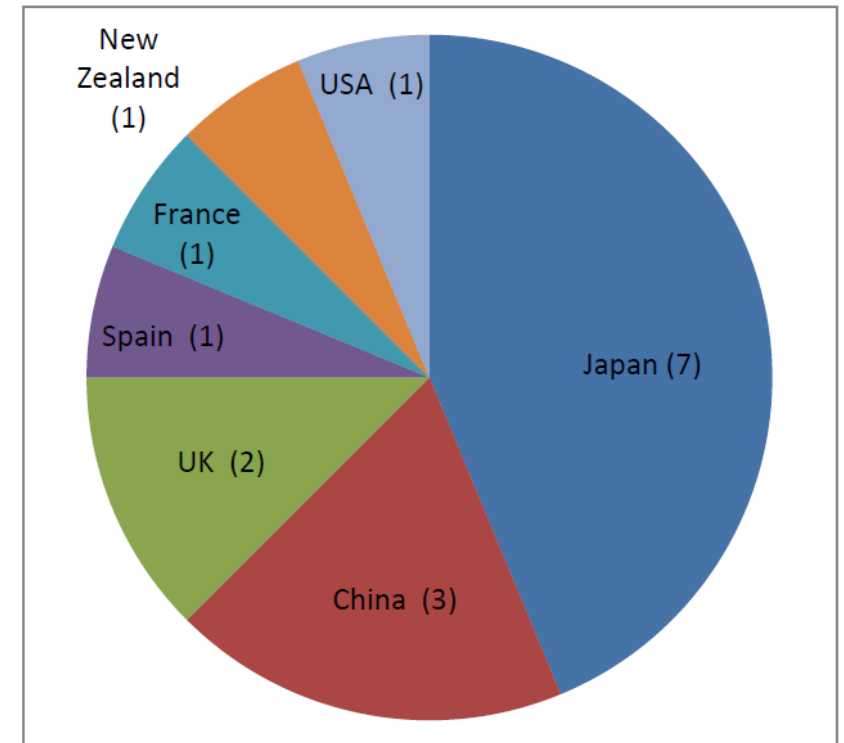


Feasibility simulation by Dr. Hideraka Saomoto (AIST, Japan) with Yade
Yade: V. Šmilauer et al. (2015), Yade Documentation 2nd ed. The Yade Project. DOI:10.5281/zenodo.34273

Number of submission on Round robin test of Angle of repose

Simulation results from 15 groups were reported

Country	Number of submissions
Japan (7)	7
China (3)	3
UK (2)	2
Spain (1)	1
France (1)	1
New Zealand (1)	1
USA (1)	1



Akiko Kouno	Japan	Railway Technical Research Institute
Asen Liu	China	Tianjin University
Hitoshi Nakase	Japan	Tokyo Electric Power Services Co., Ltd.
Hiroyuki Shimizu	Japan	Kajima corporation
Jérôme Duriez	France	Irstea, RECOVER
Joaquín Irazábal González	Spain	Paseo General Martínez Campos
Kevin Chew	New Zealand	University of Canterbury
Masahide Otsubo	Japan	Tokyo University
Mourad Zeghal	USA	Rensselaer Polytechnic Institute
Ryoh Kuramoto	Japan	Kozo Keikaku Engineering Inc.
Taisuke Nishiura	Japan	JAMSTEC
Vasileios Angelidakis	UK	Newcastle University
Xintong Li	China	Tianjin University
Zhuyuan Lin	China	Nanjing University
Xiaomin Xu	UK	University of Cambridge

Updated schedule

Schedule:

September 2019	First round robin test	Call for 1st simulation
May 2020		Submission of result for 1st simulation
<u>March 2021</u>		Feedback for 1st simulation
<u>September 2021</u>	Second round robin test (rescheduled, details will be provided in 2021)	Call for 2nd simulation
March 2022		Submission of result for 2nd simulation
September 2022		Feedback for 2nd simulation
<u>March 2023</u>		Summary report will be opened

Soil Properties and Modeling Committee: Proposed Procedure for Electing the Vice Chair

DRAFT: 02/28/2018

Matt Evans, SP&M Chair, 2015-2018

1. Timing for Vice Chair elections will be tied to the outgoing Chair's final Committee Meeting at the annual Geocongress.
2. The Election Organizer will typically be the outgoing Chair or her/his designee.
3. When the agenda for that meeting is circulated (typically, the week before Geocongress), the Chair will announce a call for nominations for the Vice Chair elections. The nomination window will remain open until 11:59 PM EST the Monday after the Geocongress closes. Self-nominations are appropriate and encouraged.
4. Each nominee should provide a short vision statement and biography to the Election Organizer. This information should be no more than one page, total.
5. The vision statements and biographies will be distributed to the committee via email by the Election Organizer.
6. The voting window will remain open for one week after the distribution of candidate materials.
7. Each committee member (including the nominees) shall have one ballot. Each ballot will consist of one primary vote and one alternate vote (must be two different people). In the event of a tie, the alternate votes from every ballot that did not list one of the tied candidates as the primary vote will be counted. If there is still a tie after the instant runoff, the Election Organizer will flip a coin in the (virtual) presence of another committee member designated by the sitting Vice Chair.
8. The winner will be the candidate with the most votes. A majority is not necessary.
9. At least 50% of the people listed on the current membership roster must participate in order for the vote to be valid.
10. It is the responsibility of the Election Organizer to maintain the confidentiality of each individual ballot.