PEER Blind Prediction Contest of Shaking Table Tests for a 1/3-Scale Bridge Bent with Resilient Columns

1. All information and details regarding the blind prediction contest can be found in the following web site: http://peer.berkeley.edu/prediction_contest/.

2. Contestants may consist of individuals or teams.

3. An individual can only be involved in a single team.

4. If an individual is part of a team, the individual cannot participate in the competition separately as an individual.

5. The individual or team must use the contest submittal spreadsheet and input values as follows:
   a. Relative horizontal displacements are to be provided with respect to the base of the footing and are to be provided in milimeter units to one (1) place beyond the decimal point.
   b. Overturning moment is to be provided in units of kN-m to one (1) place beyond the decimal point.
   c. Shear and axial forces are to be provided in units of kN to (1) place beyond the decimal point.
   d. Contestants are expected to submit their predictions in the form of two peak values, one for the maximum of the positive values (indicated with P) and one for the maximum of the absolute of the negative values (indicated with N).
   e. Values shall be determined for the 9 applied ground motions (GM1, GM2, GM3, GM4, GM5, GM6, GM7, GM8, and GM9)

6. Structural drawings are provided in U.S. customary units. However, output data is requested in SI units. A translation from US customary to SI units and vice versa can be easily done in the google.com prompt. For example, type in the google.com prompt:
   a. 430000 pounds feet in kN m
   b. 4 ft 3 inches in mm
   c. 3500 psi in MPa

7. The tested material properties for steel bars, concrete, prestressing bars, steel shell and grout are provided in U.S. customary units. For grout, a datasheet is provided in addition to the data from the conducted material tests.

8. Description of the construction sequence, supported with photographs, is provided.

9. The recorded data is processed by band-pass filtering with a high-order (5000) FIR digital filter with a 0.25 – 25 Hz bandwidth. Forces are determined from recorded accelerations and the corresponding masses.

10. Accelerations measured on the table are provided to the contestants in units of g without filtering. These accelerations should be used as input to the developed analytical models.

11. The individual or team must declare one of the 2 categories on the Spread Sheet:
    a. Researchers (including post docs and students)
    b. Engineering Professional

12. Except for category winners, all submittals will be kept anonymous.

13. Contestants should submit their results before November 27, 2017. Winners in each category will be notified by December 11, 2017.

14. Along with the predictions, contestants should submit a technical report of 5-20 pages electronically as a pdf document in ASCE journal format. Contents of the report may include text, figures and tables that describe the model, utilized software platform, materials, elements, solution algorithms, assumptions, discussion of the analysis results, and summary of key results beyond those in the spreadsheet. ASCE Journal format can be downloaded from the Submission Format tab.

15. The following system will be used to judge the category winners. Teams or individuals are requested to predict the 10 quantities listed in the provided spreadsheet (Contestantsubmittalspreadsheet.xlsx). Error is defined as the absolute value of the difference between the measured parameter and the values predicted by the contestant.
    a. The team with minimum error in a question will receive 8 points
    b. The second team will receive 5 points
    c. The third team will receive 3 points
    d. The fourth team will receive 1 point

    All points will be added up and the team with the greatest total will be declared the winner of this category.

    If there are sufficient (based on the judgement of the evaluation committee) participants in each category, there will be one winner for each of the two categories. Otherwise, no distinction will be made between the two categories in announcing the winners. Awards will be given in a special ceremony at the 2018 PEER Annual Meeting.

16. A representative of the category winners will be invited to the 2018 PEER Annual Meeting that will be held in the UC-Berkeley campus, January 18-19, 2018, with

reasonable amount of travel expenses covered. The representative will be asked to make a short presentation on the techniques used (model and analysis) in making the winning predictions.

17. Questions about the blind prediction contest or details of the structure or ground motions can be submitted to (e-mail address: peer_center@berkeley.edu) until November 1, 2017. Questions and answers will be posted on the web site http://peer.berkeley.edu/prediction_contest/ under the *Notification* tab and will be updated twice per week.

18. Teams from the UC-San Diego or the UC-Berkeley experimental research teams are not allowed to participate.