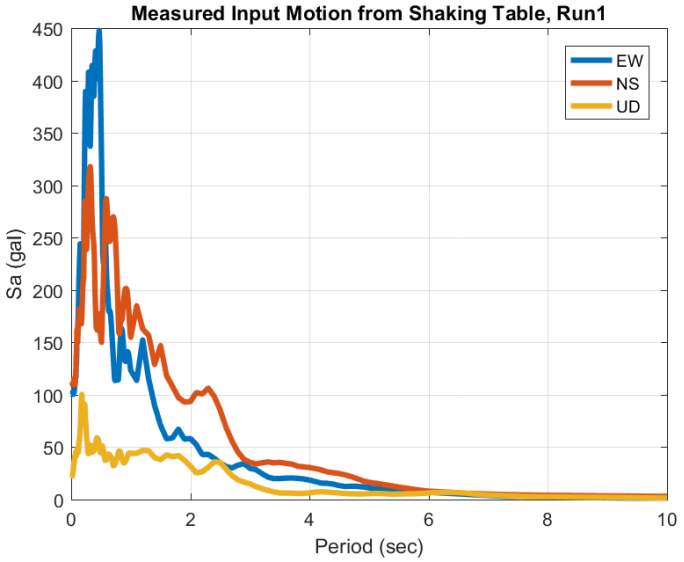
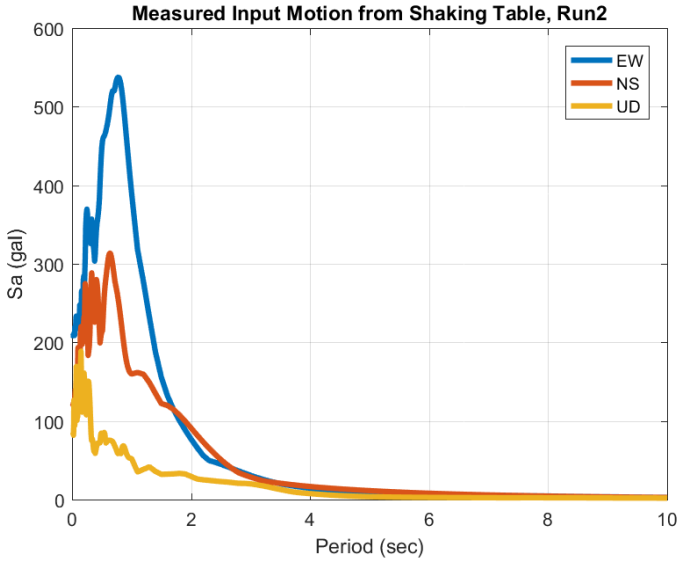
Contest website:
http://www.ncree.org/2018AnalysisContest/

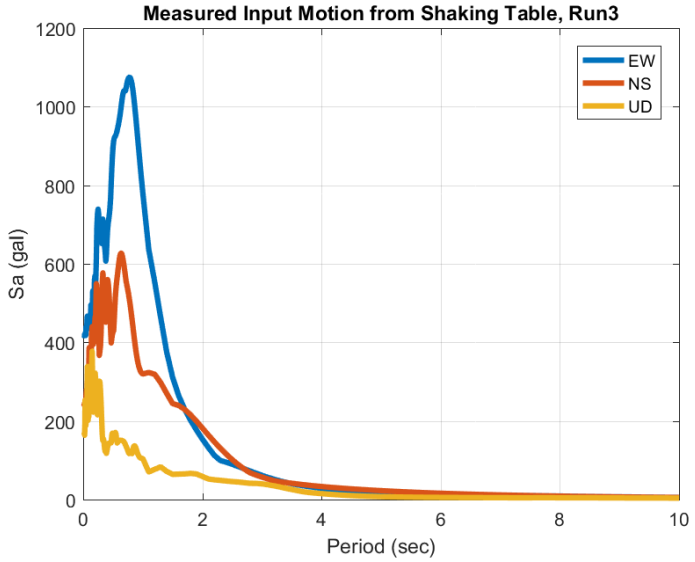
National Center for Research on Earthquake Engineering

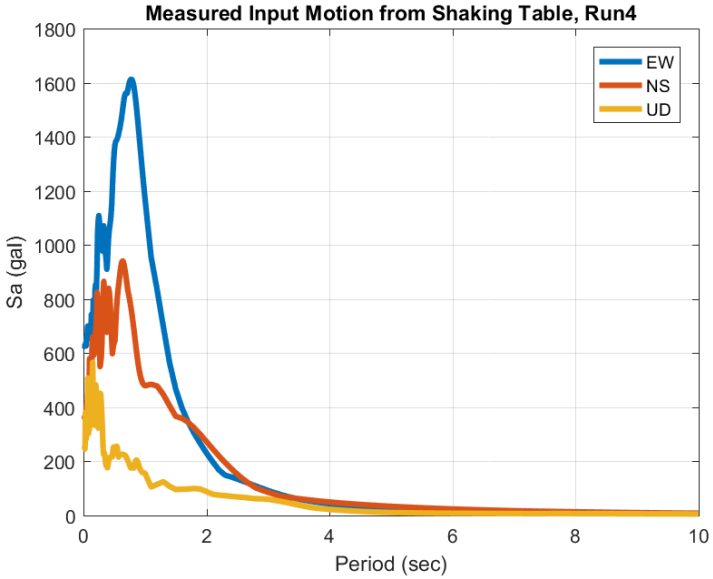
Analysis Contest on a 7-story Reinforced Concrete Building under Near-fault Earthquakes

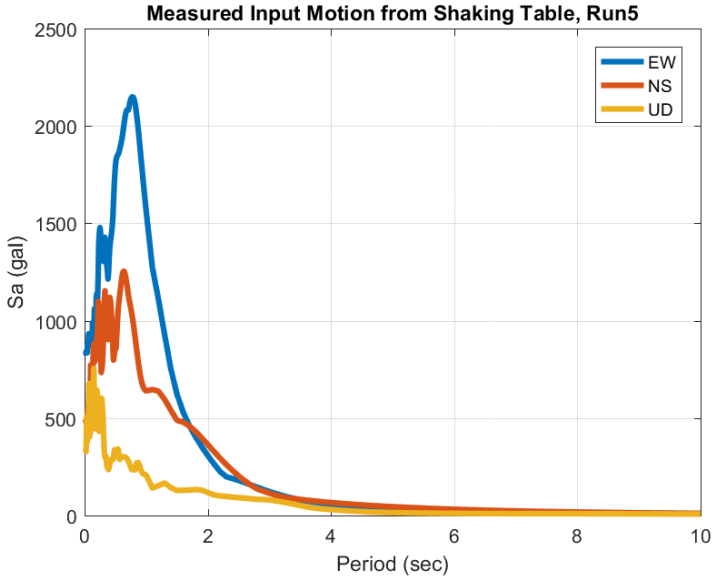
Results of the Contest











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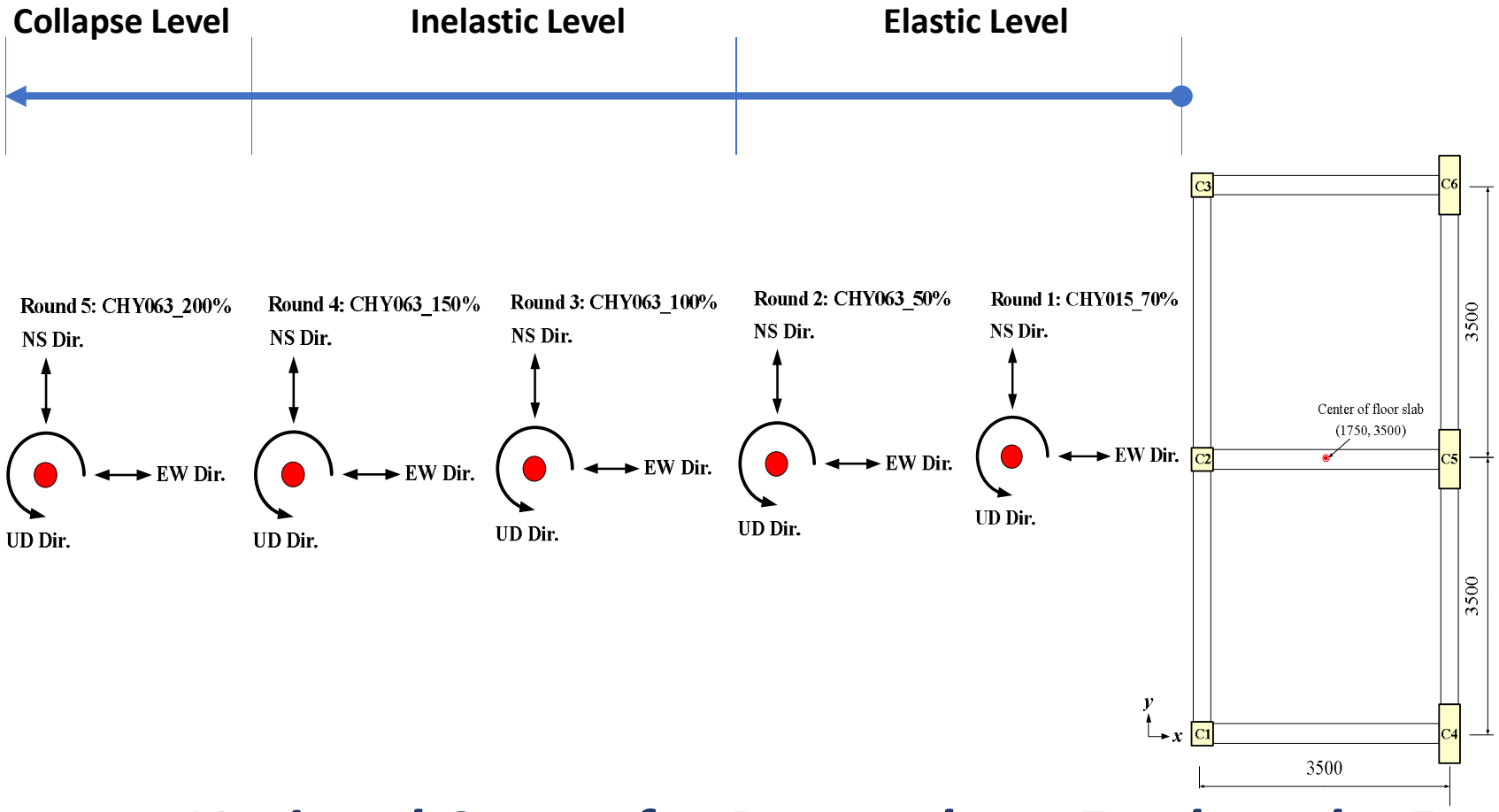
Ground motions

- **Elastic Level**: far-field ground motion, near fault ground motion
- **Inelastic Level**: near fault ground motions
- **Near Collapse Level**: near fault ground motions
- ' **Run 1_CHY015_70%**' : Far field ground motion CHY015 scaled to 70%
- ' **Run 2_CHY063_50%**' : Near field ground motion CHY063 scaled to 50%
- ' **Run 3_CHY063_100%**' : Near field ground motion CHY063 in full scale
- ' **Run 4_CHY063_150%**' : Near field ground motion CHY063 scaled to 150%
- ' **Run 5_CHY063_200%**' : Near field ground motion CHY063 scaled to 200%

Earthquake Scenario



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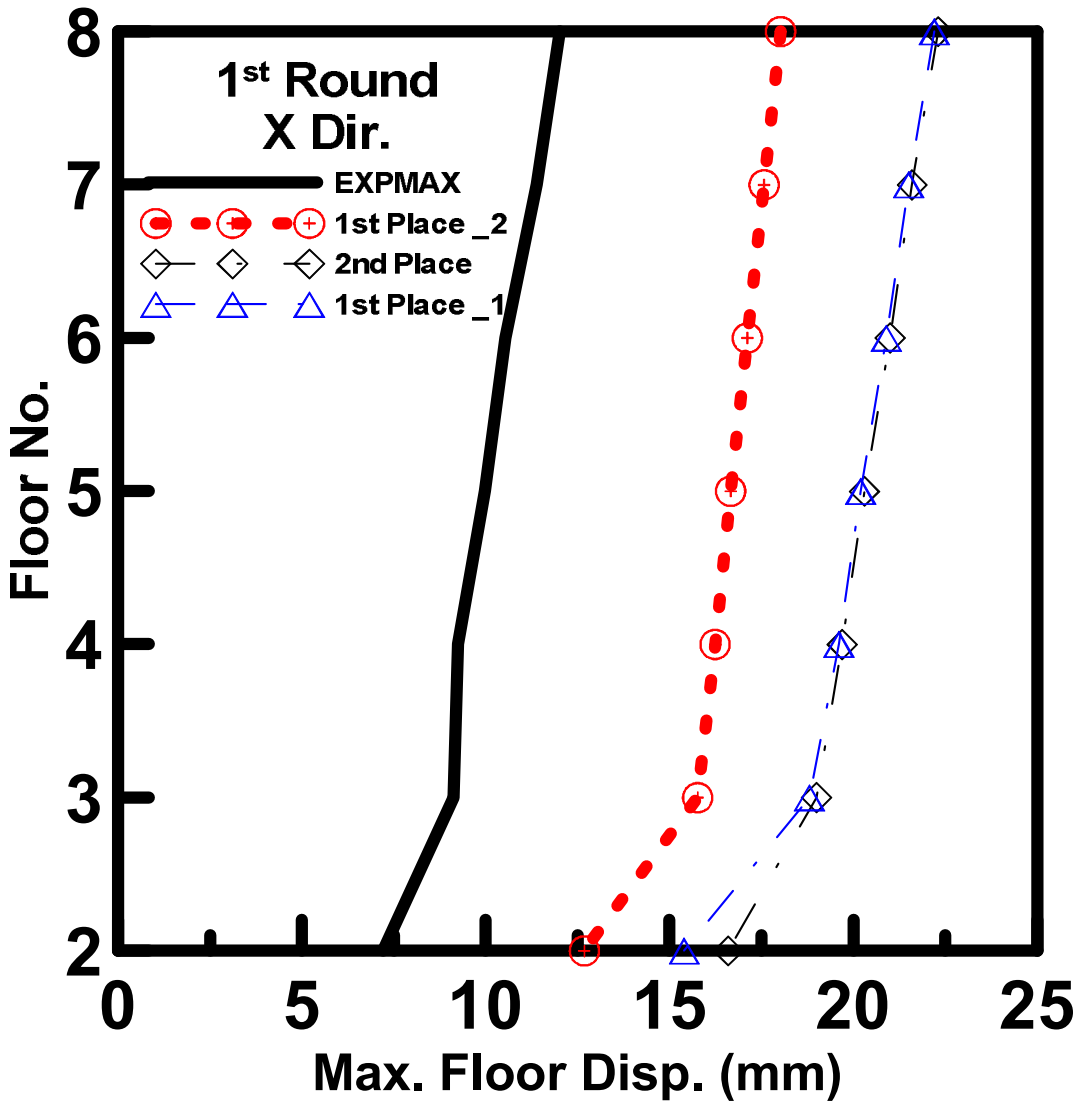
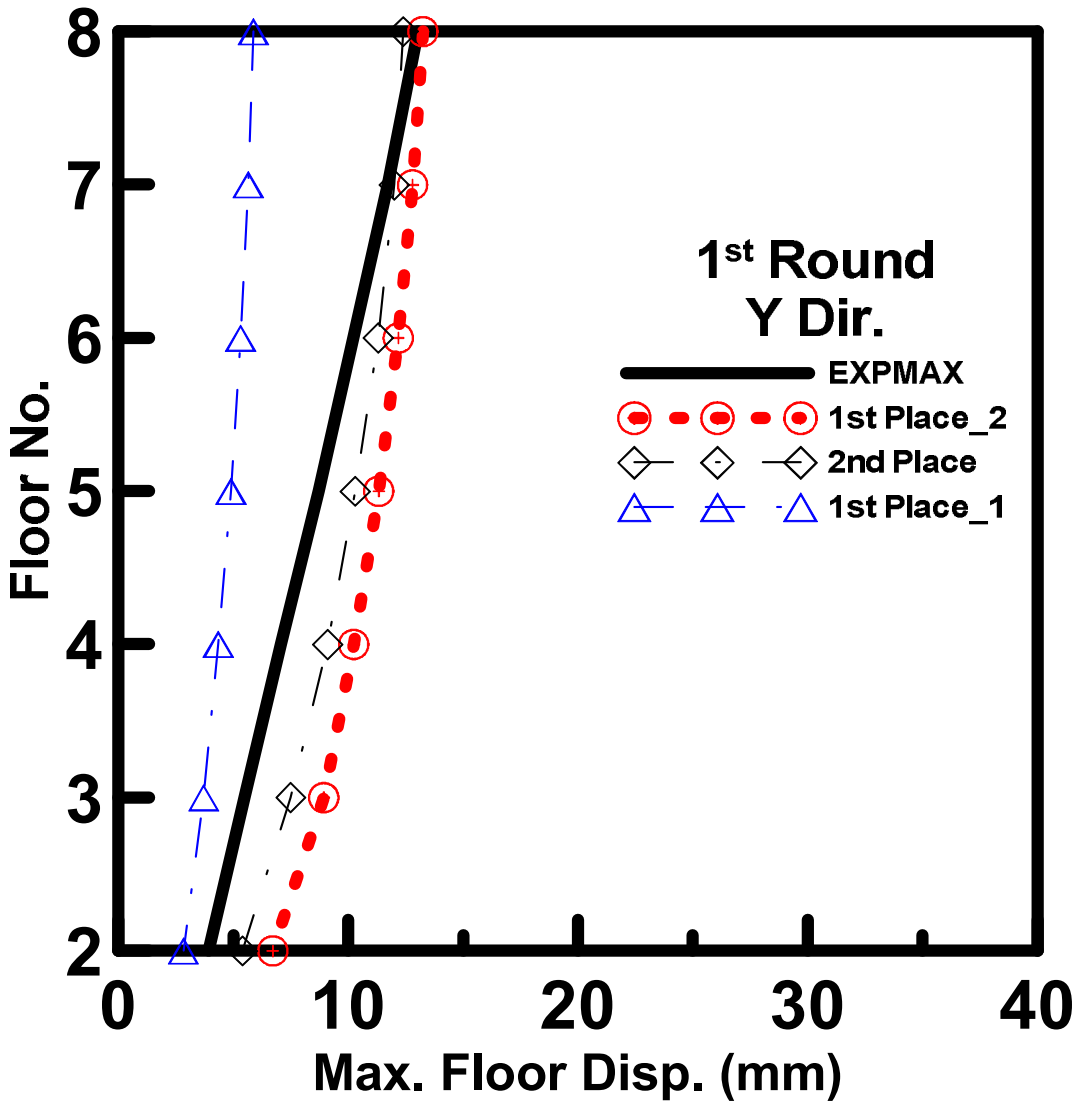
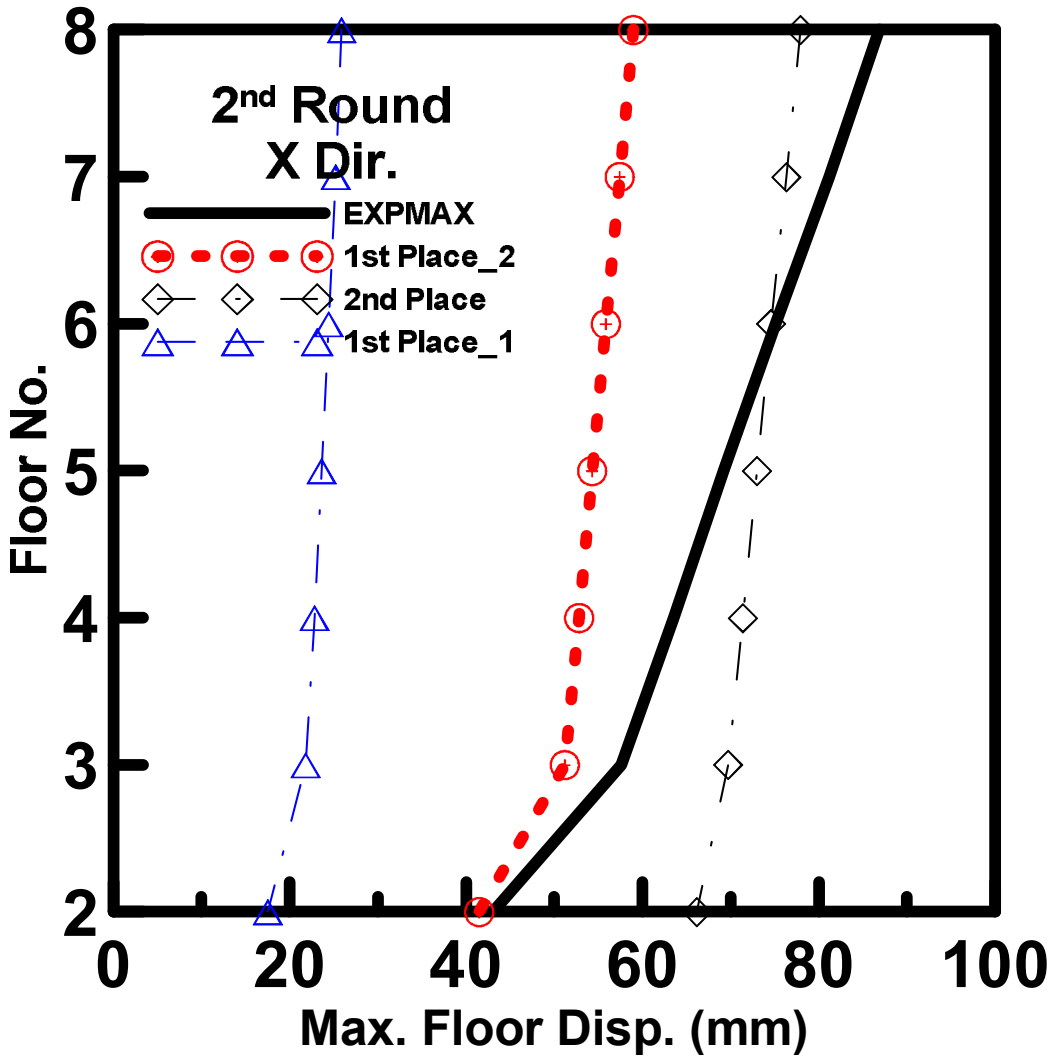
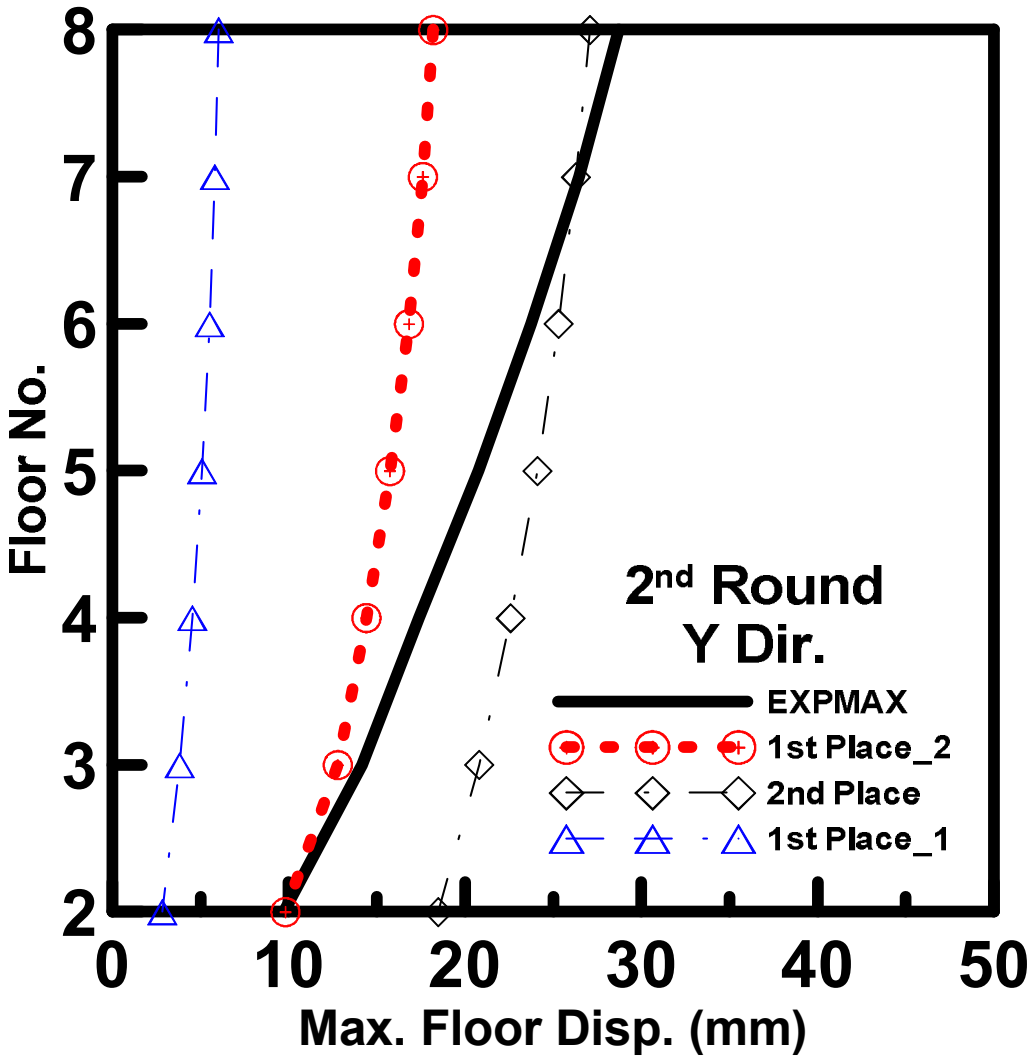
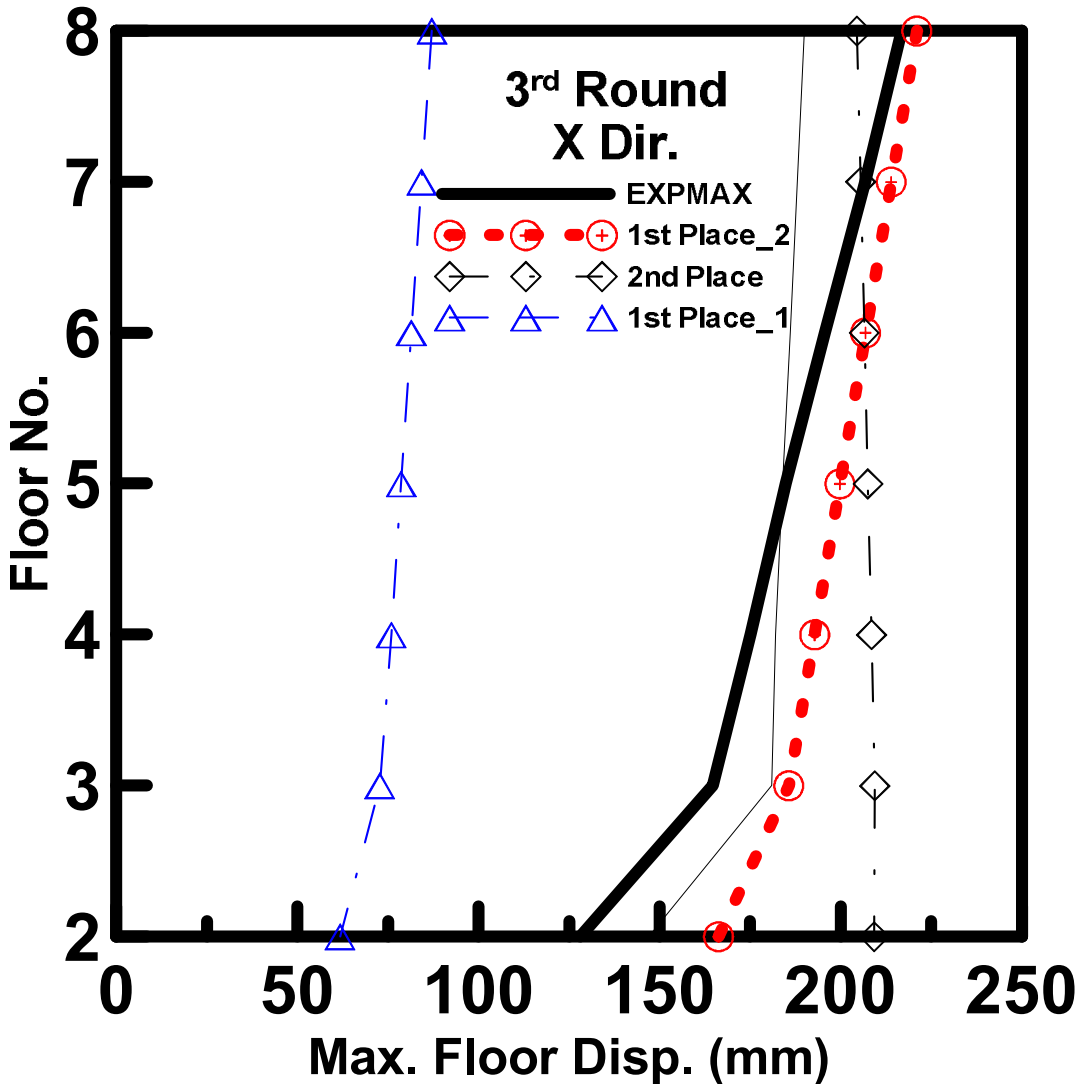
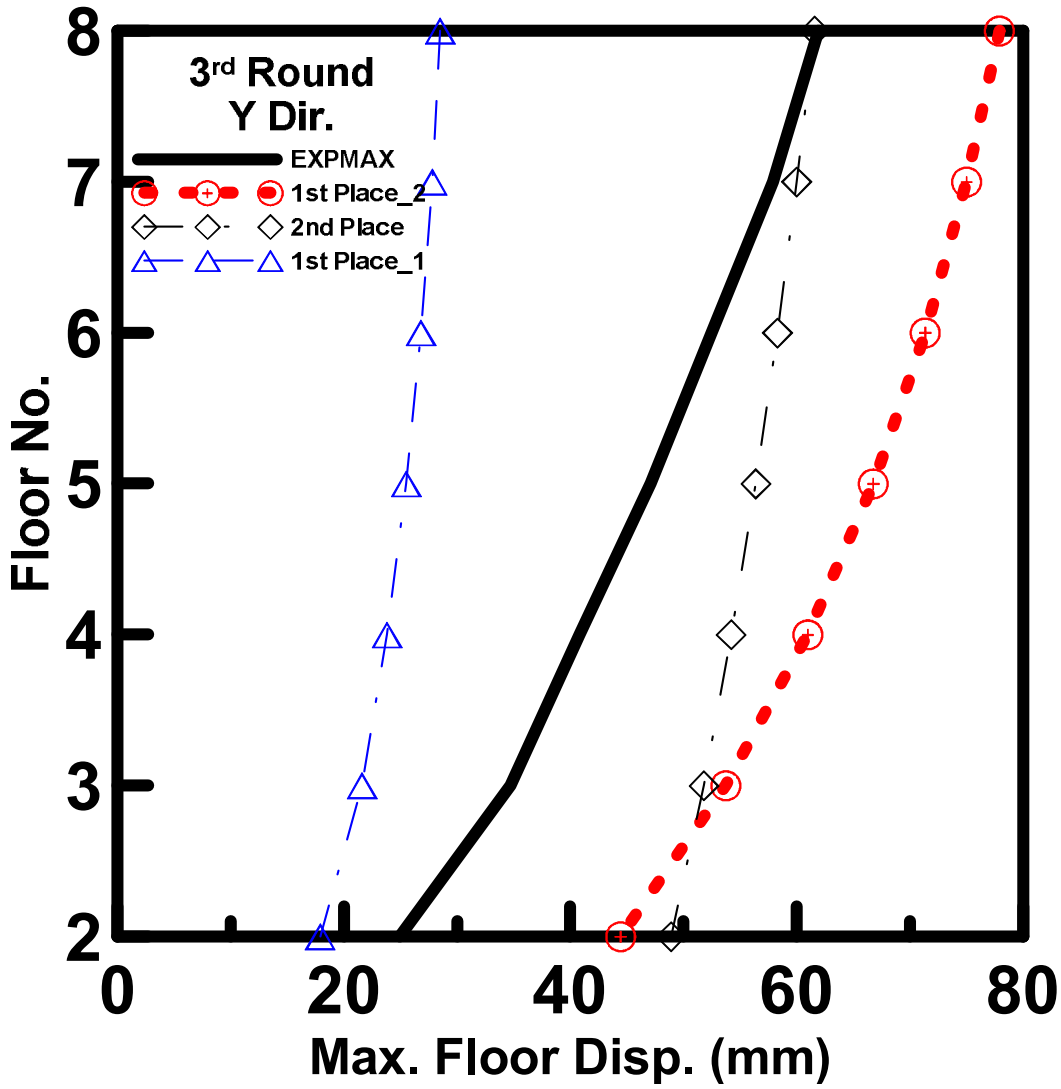

1st Round
X Dir.
EXPMAX
1st Place _2
2nd Place
1st Place _1
Floor No.
Max. Floor Disp. (mm)
0
5
10
15
20
25
2
3
4
5
6
7
8

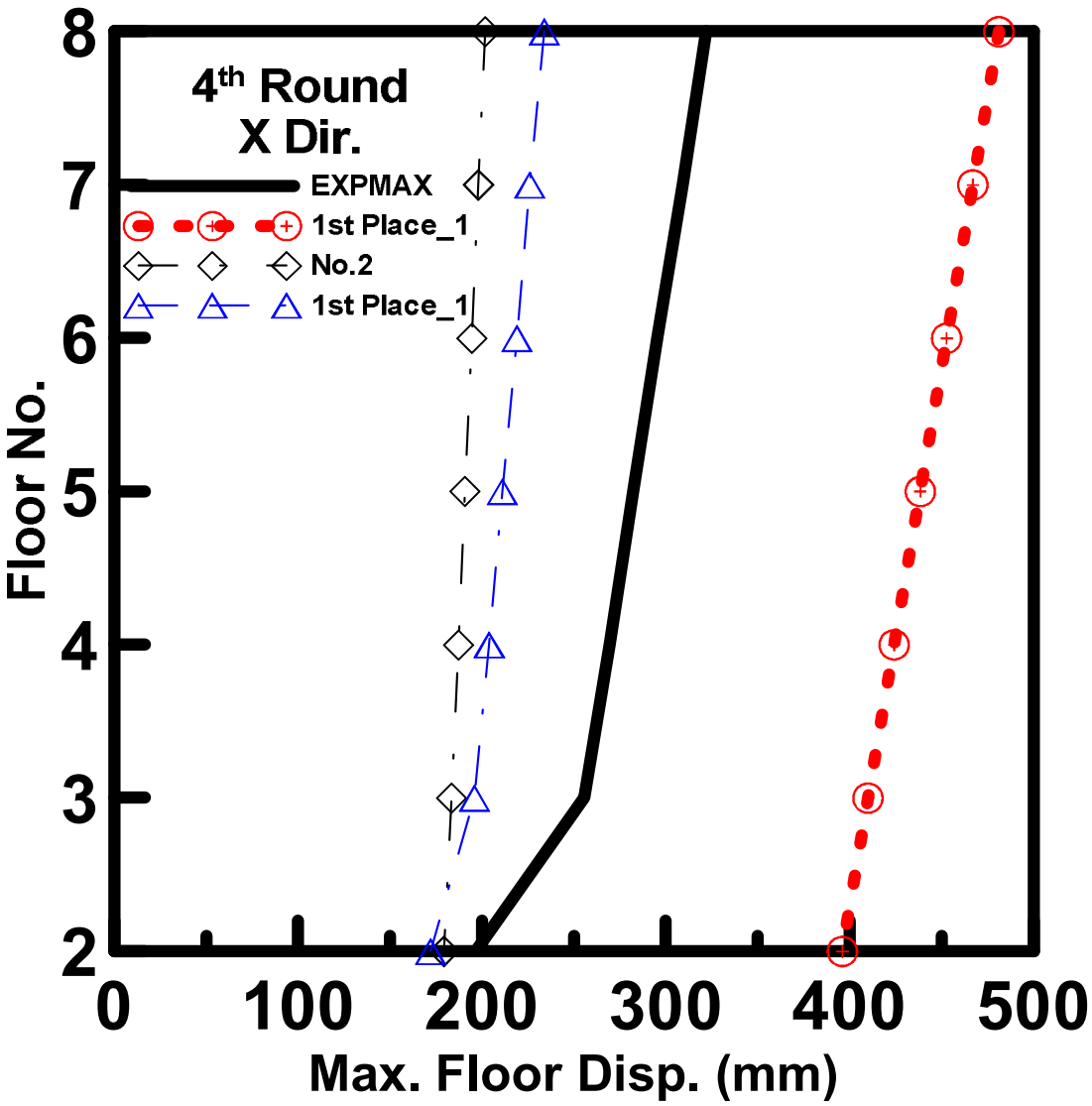

1st Round
Y Dir.
EXPMAX
1st Place_2
2nd Place
1st Place_1
Floor No.
Max. Floor Disp. (mm)
0
10
20
30
40
2
3
4
5
6
7
8

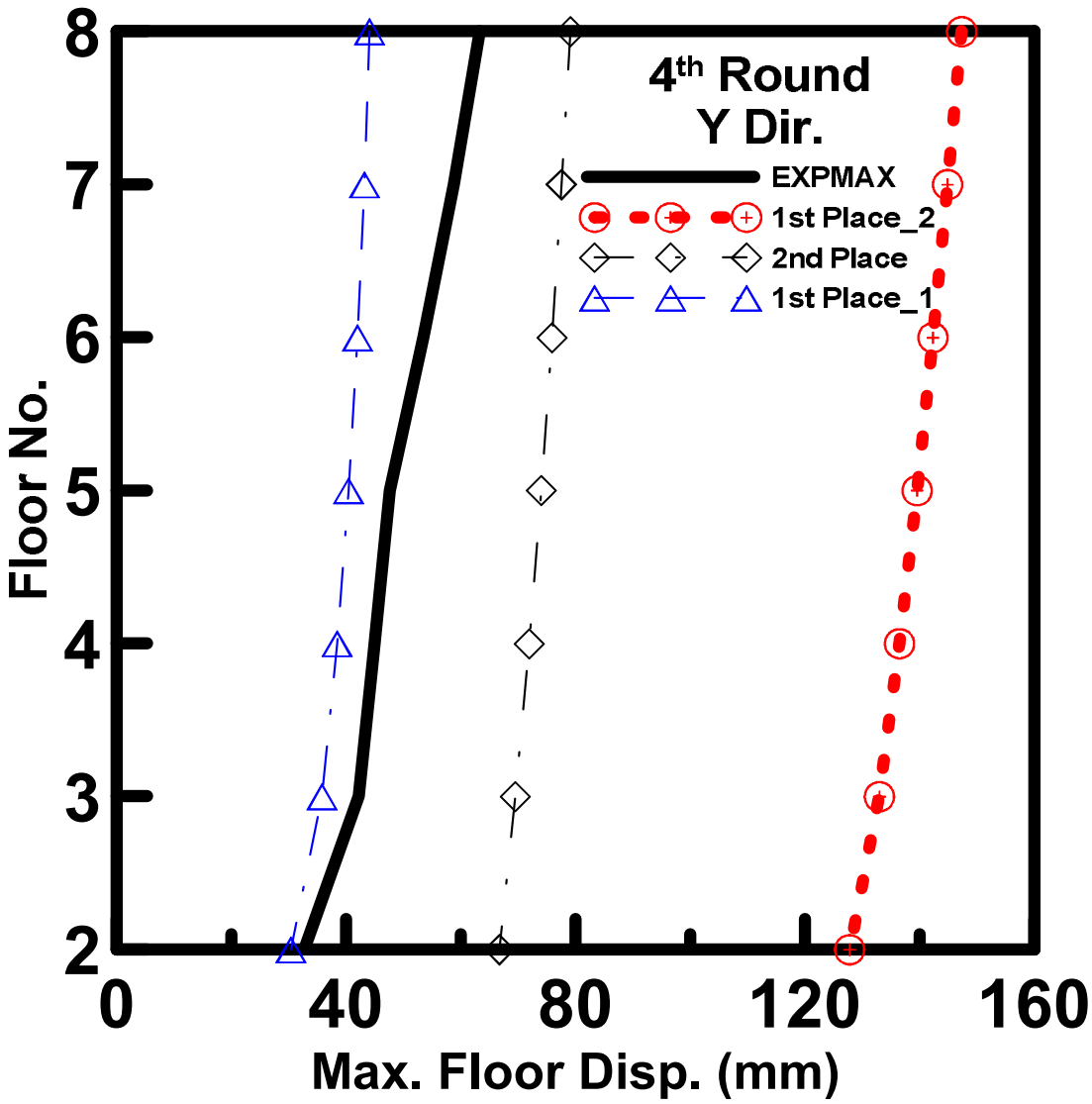

2nd Round
X Dir.
EXPMAX
1st Place_2
2nd Place
1st Place_1
Floor No.
Max. Floor Disp. (mm)
0
20
40
60
80
100
2
3
4
5
6
7
8

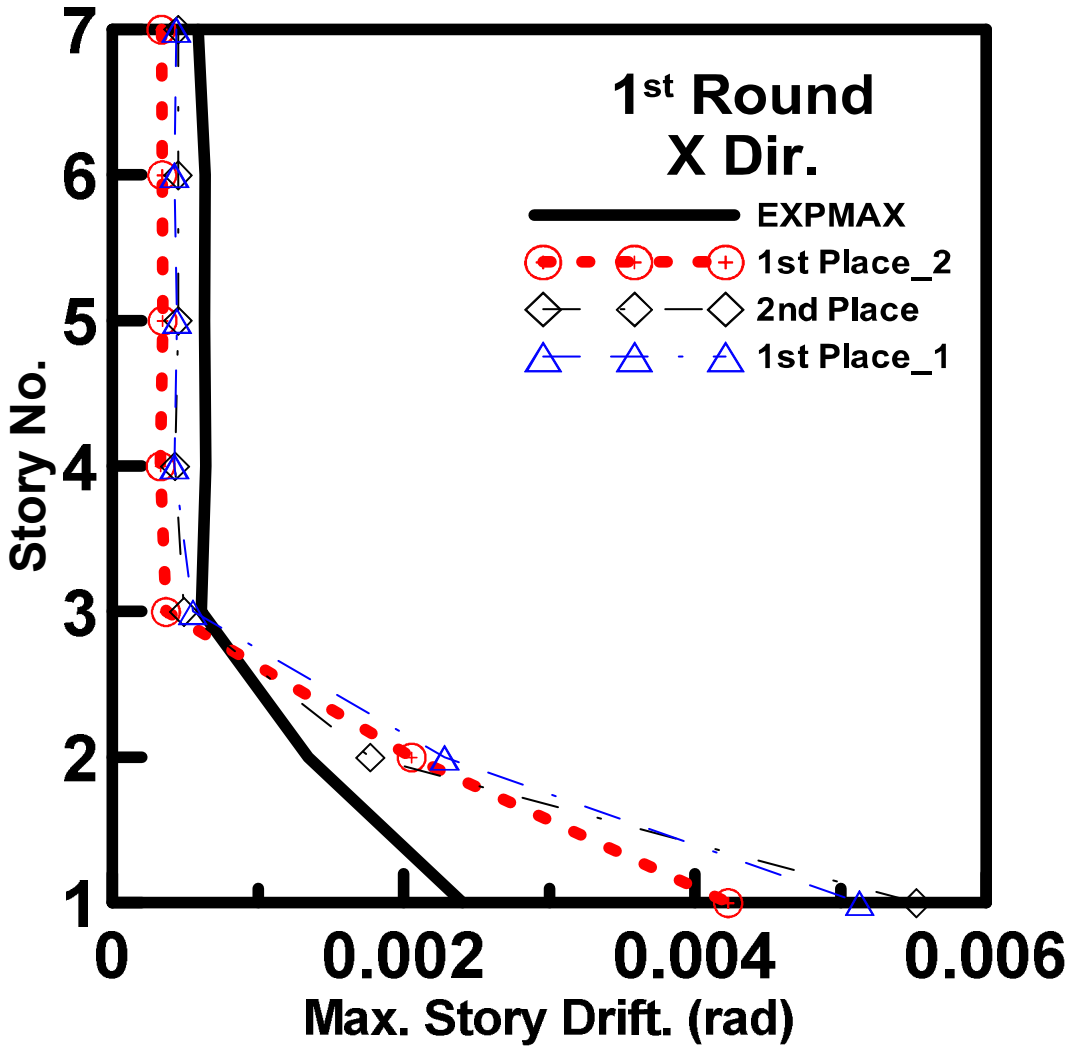

2nd Round
Y Dir.
EXPMAX
1st Place_2
2nd Place
1st Place_1
Floor No.
Max. Floor Disp. (mm)
0
10
20
30
40
50
2
3
4
5
6
7
8

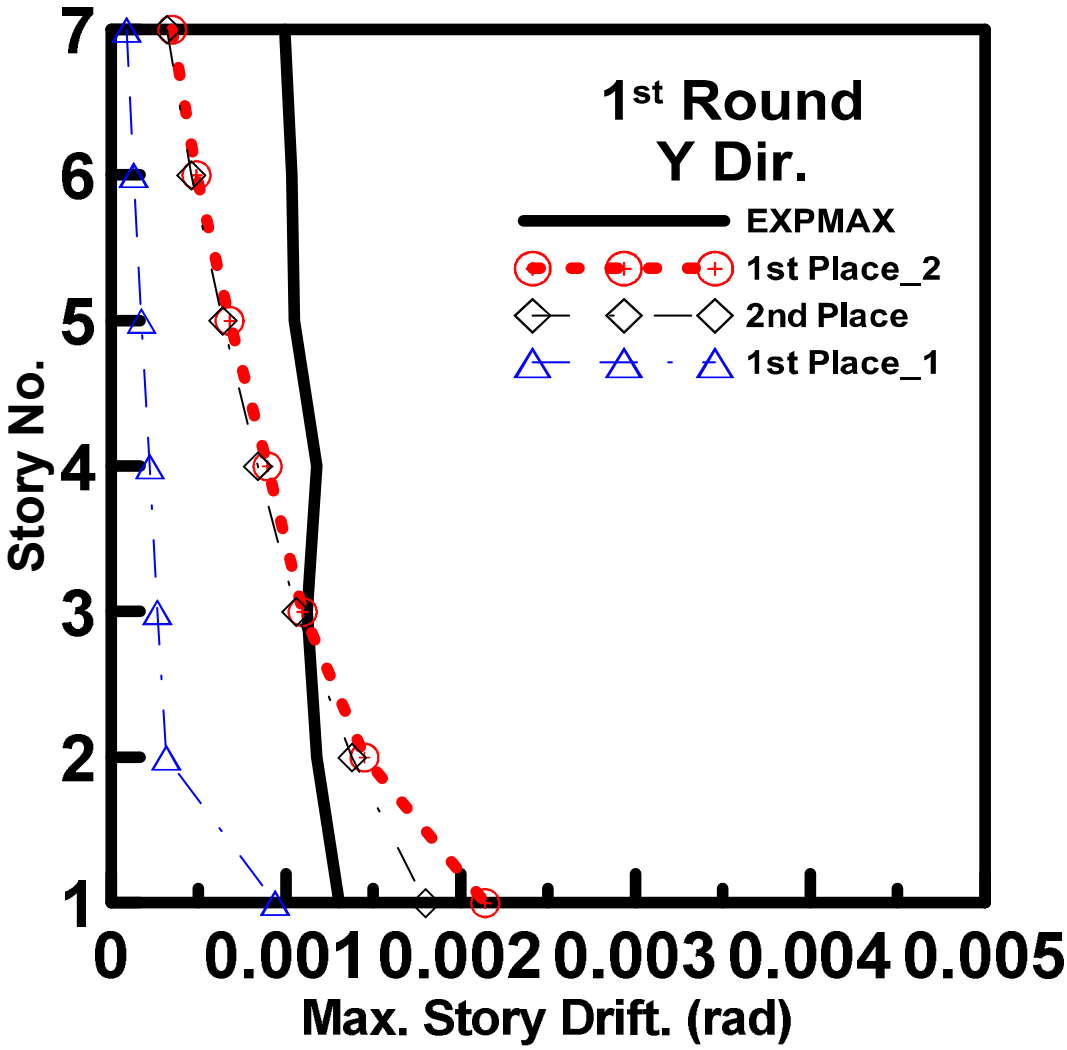

3rd Round
X Dir.
EXPMAX
1st Place_2
2nd Place
1st Place_1
Floor No.
Max. Floor Disp. (mm)
0
50
100
150
200
250
2
3
4
5
6
7
8

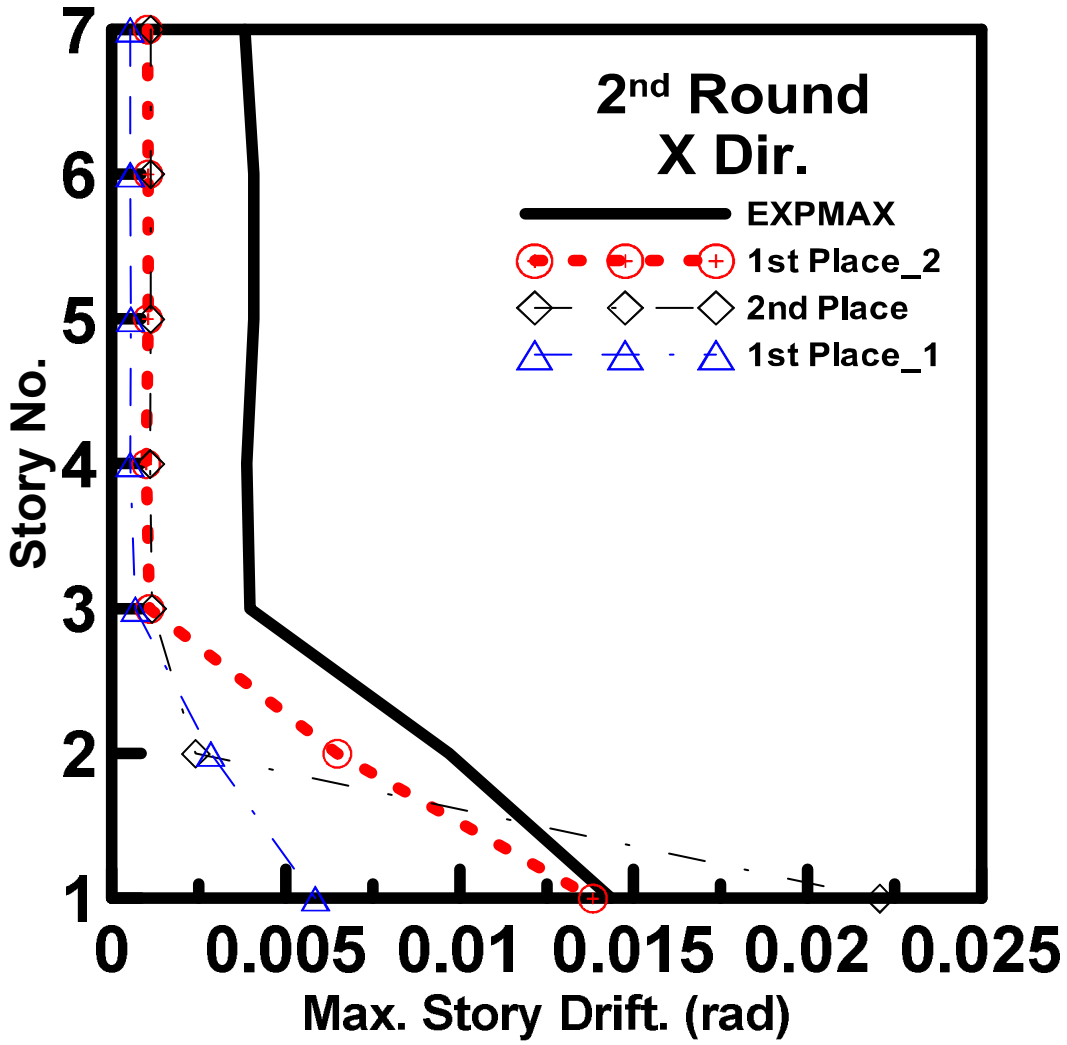

3rd Round
Y Dir.
EXPMAX
1st Place_2
2nd Place
1st Place_1
Floor No.
Max. Floor Disp. (mm)
0
20
40
60
80
2
3
4
5
6
7
8

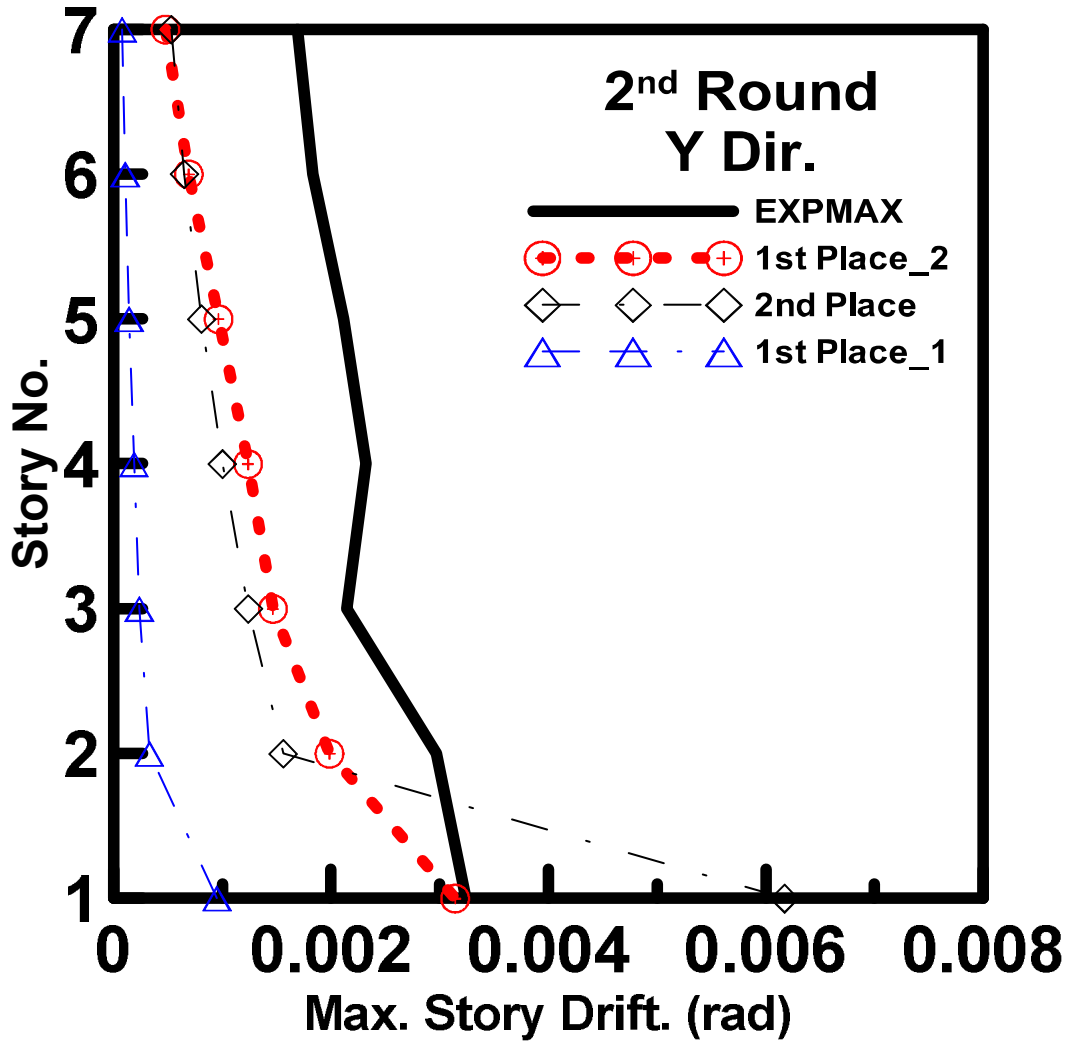

4th Round
X Dir.
EXPMAX
1st Place_1
No.2
1st Place_1
Floor No.
Max. Floor Disp. (mm)
0
100
200
300
400
500
2
3
4
5
6
7
8

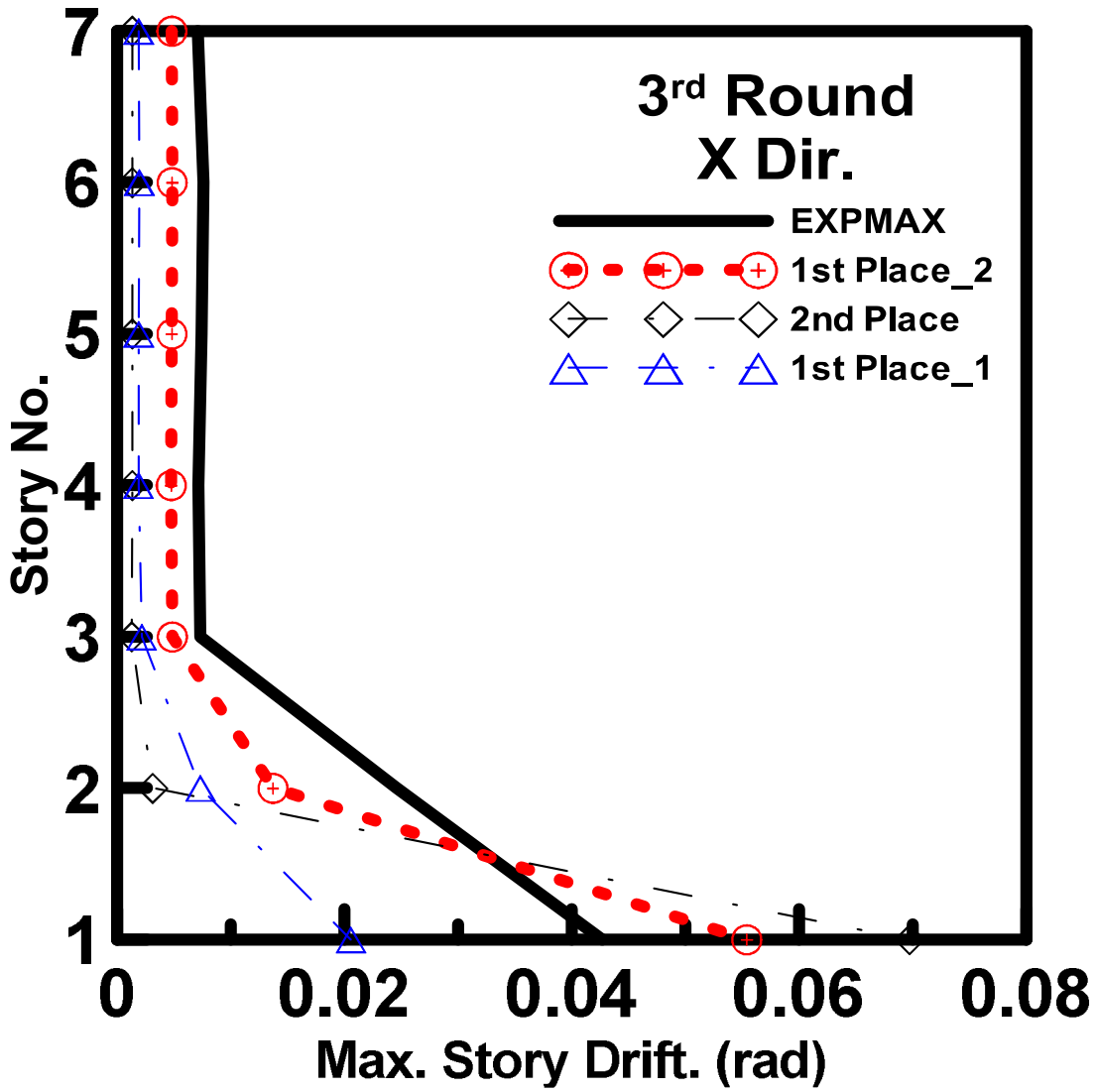

4th Round
Y Dir.
EXPMAX
1st Place_2
2nd Place
1st Place_1
Floor No.
Max. Floor Disp. (mm)
0
40
80
120
160
2
3
4
5
6
7
8

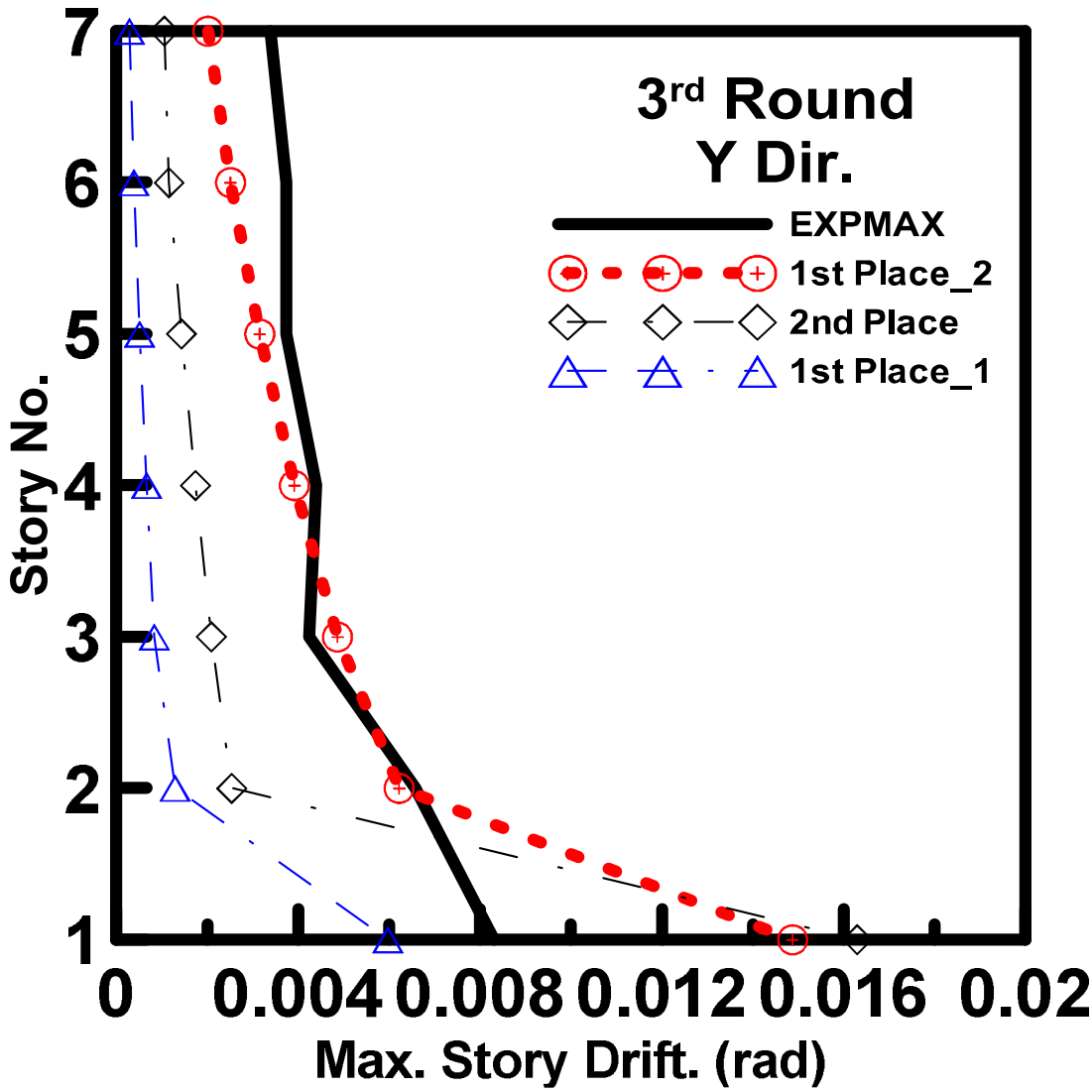

1st Round
X Dir.
EXPMAX
1st Place_2
2nd Place
1st Place_1
Story No.
Max. Story Drift. (rad)
0
0.002
0.004
0.006
1
2
3
4
5
6
7

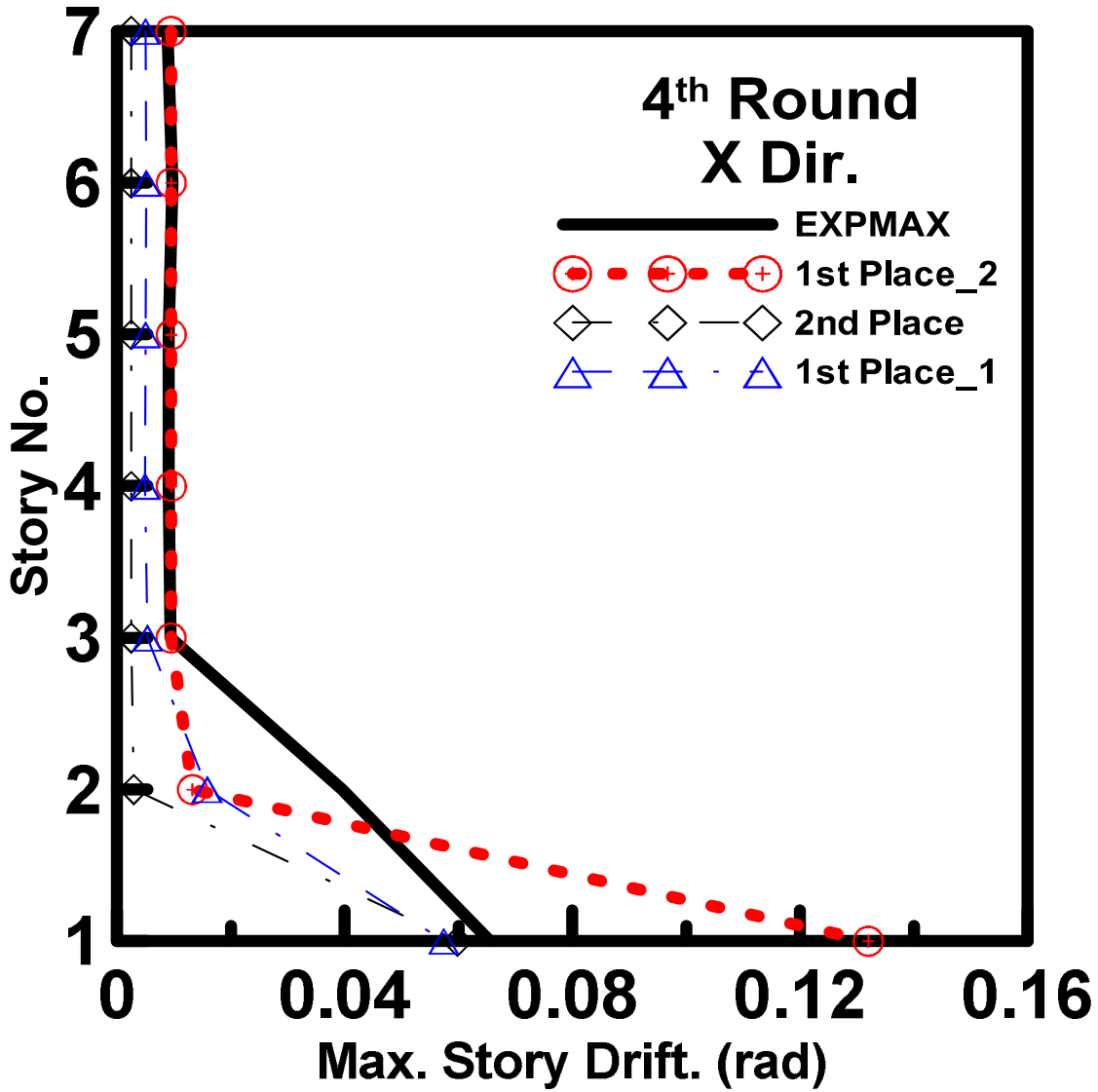

1st Round
Y Dir.
EXPMAX
1st Place_2
2nd Place
1st Place_1
Story No.
Max. Story Drift. (rad)
0
0.001
0.002
0.003
0.004
0.005
1
2
3
4
5
6
7

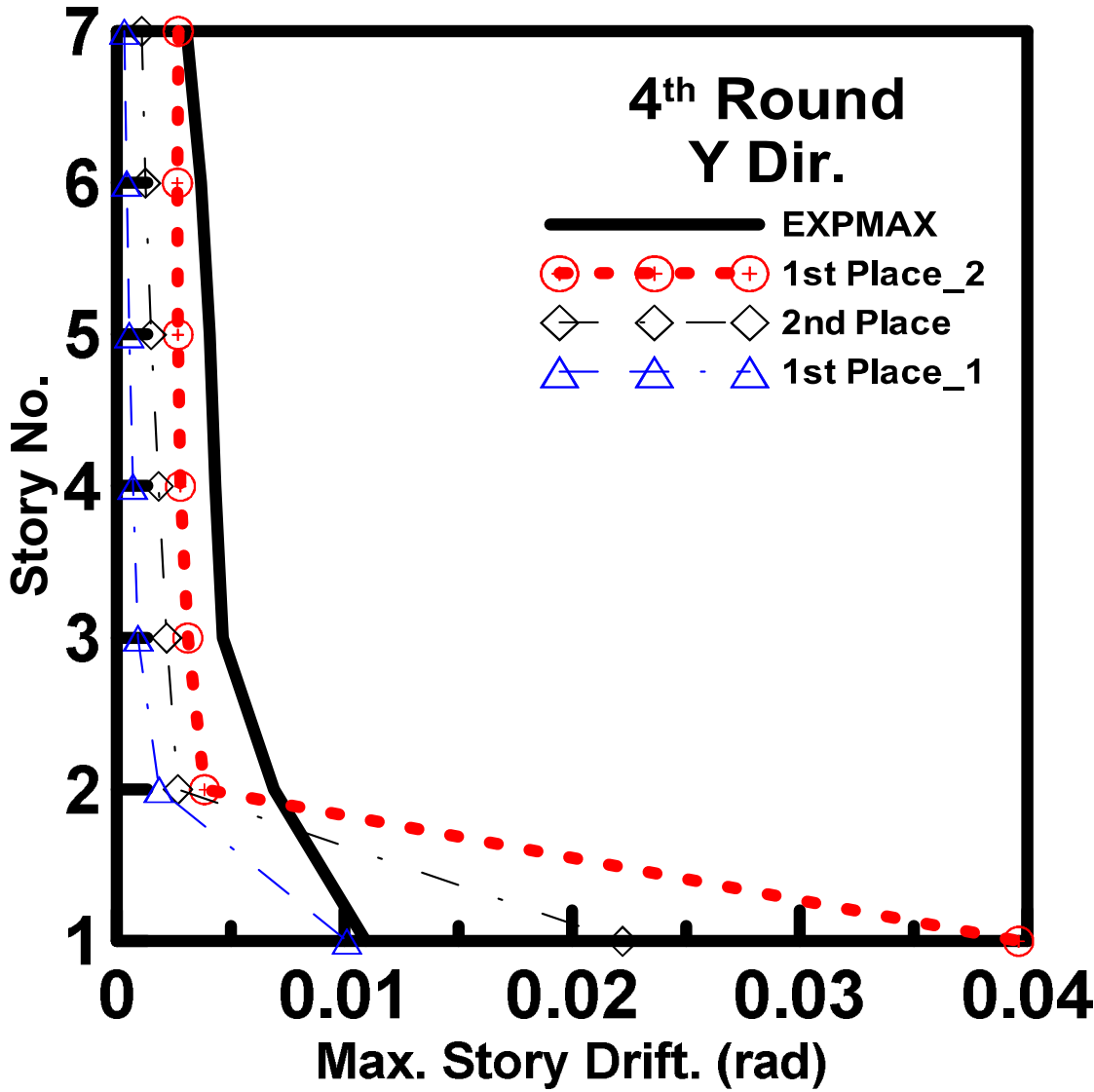

2nd Round
X Dir.
EXPMAX
1st Place_2
2nd Place
1st Place_1
Story No.
Max. Story Drift. (rad)
0
0.005
0.01
0.015
0.02
0.025
1
2
3
4
5
6
7

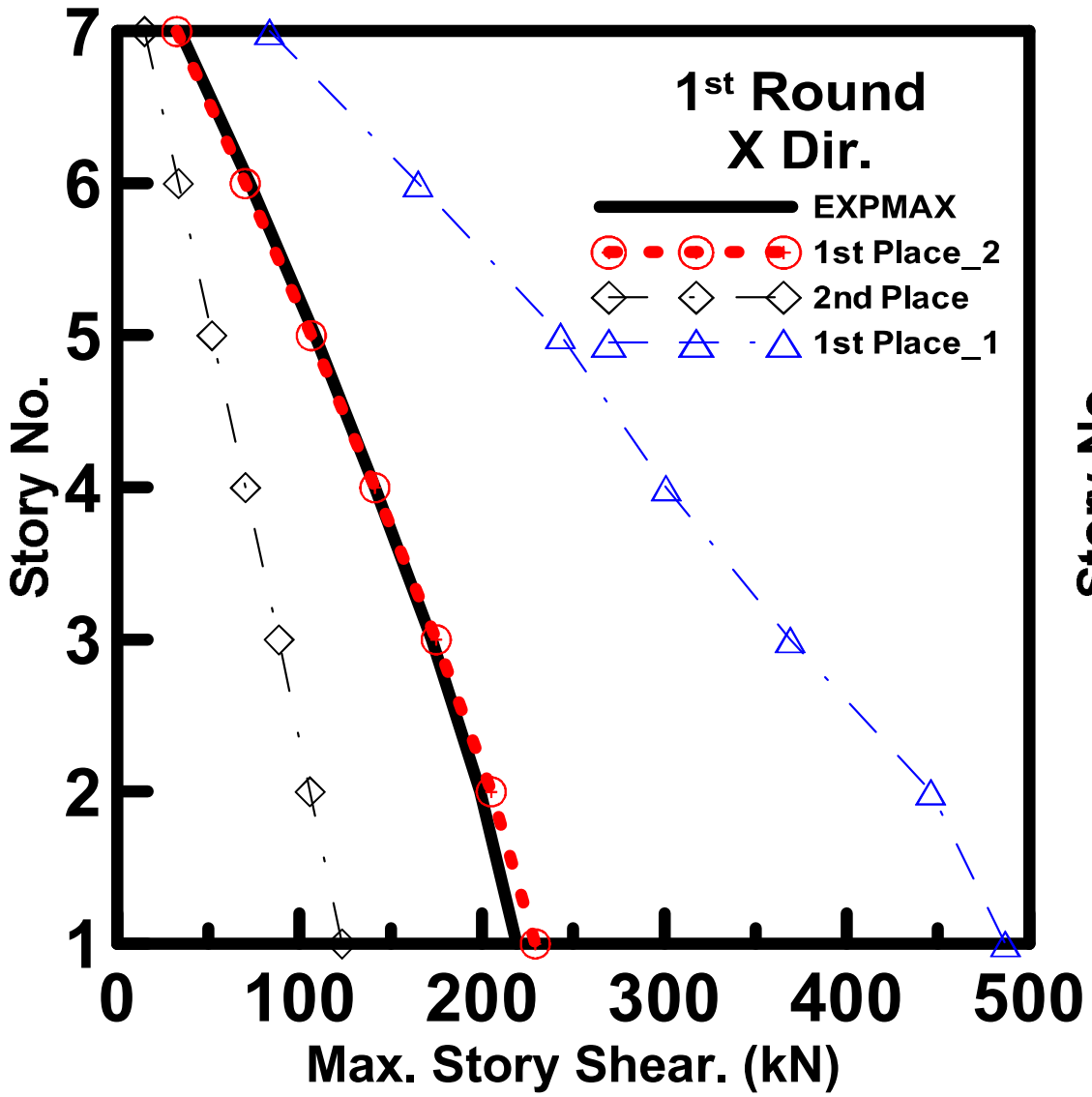

2nd Round
Y Dir.
EXPMAX
1st Place_2
2nd Place
1st Place_1
Story No.
Max. Story Drift. (rad)
0
0.002
0.004
0.006
0.008
1
2
3
4
5
6
7

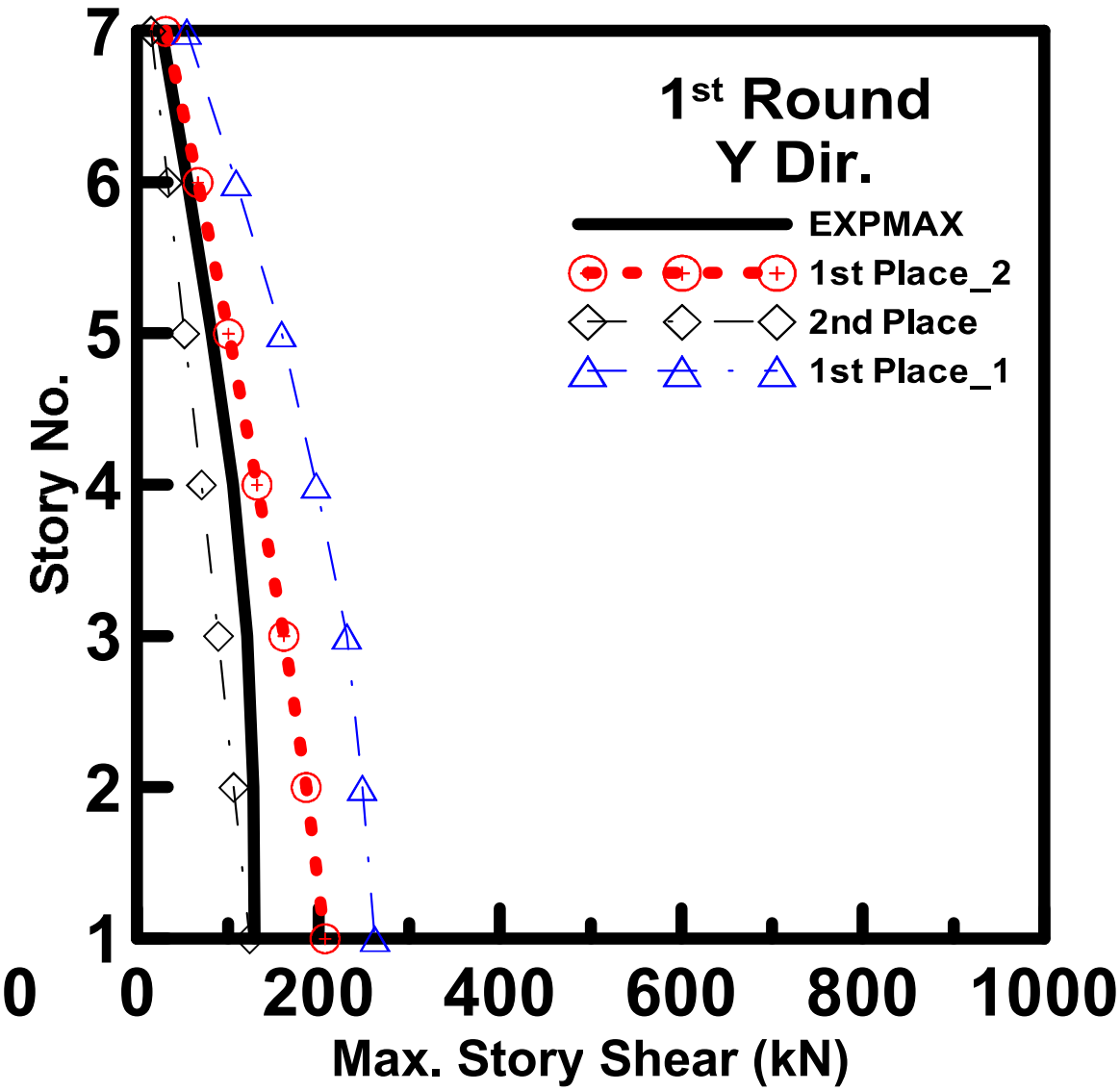

3rd Round
X Dir.
EXPMAX
1st Place_2
2nd Place
1st Place_1
Story No.
Max. Story Drift. (rad)
0
0.02
0.04
0.06
0.08
1
2
3
4
5
6
7


3rd Round
Y Dir.
EXPMAX
1st Place_2
2nd Place
1st Place_1
Story No.
Max. Story Drift. (rad)
0
0.004
0.008
0.012
0.016
0.02
1
2
3
4
5
6
7


4th Round
X Dir.
EXPMAX
1st Place_2
2nd Place
1st Place_1
Story No.
Max. Story Drift. (rad)
0
0.04
0.08
0.12
0.16
1
2
3
4
5
6
7


4th Round
Y Dir.
EXPMAX
1st Place_2
2nd Place
1st Place_1
Story No.
Max. Story Drift. (rad)
0
0.01
0.02
0.03
0.04
1
2
3
4
5
6
7





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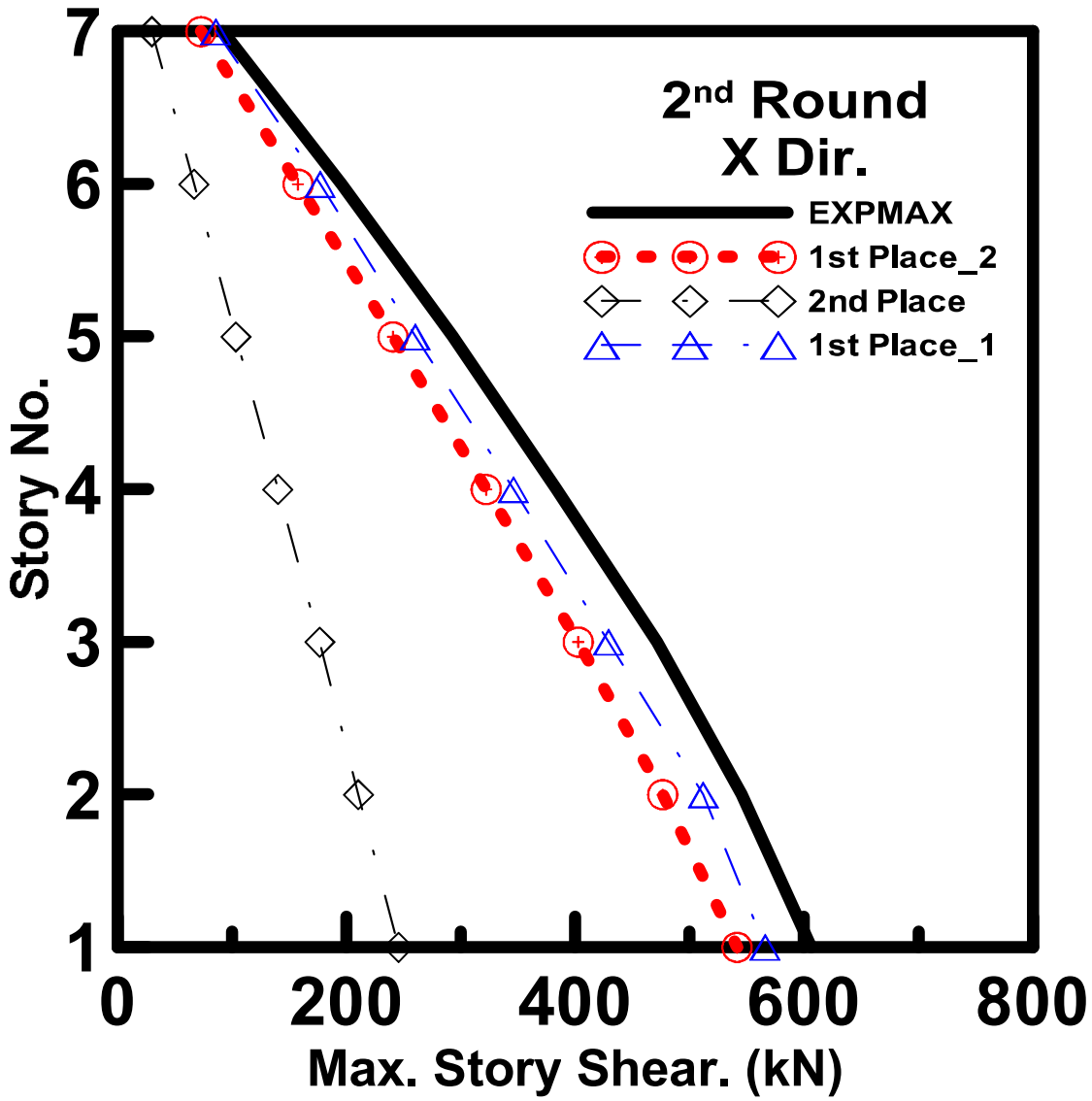

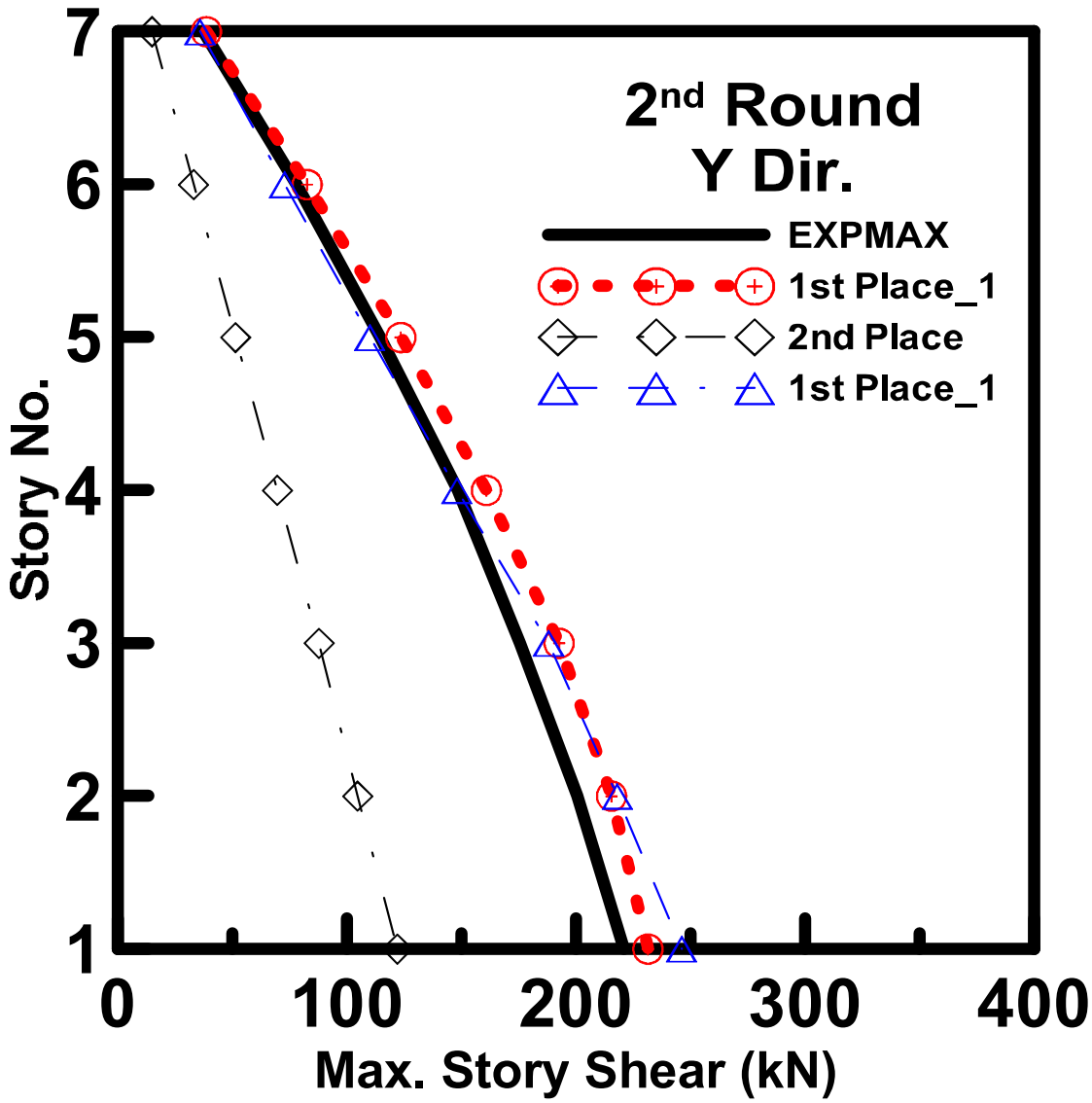

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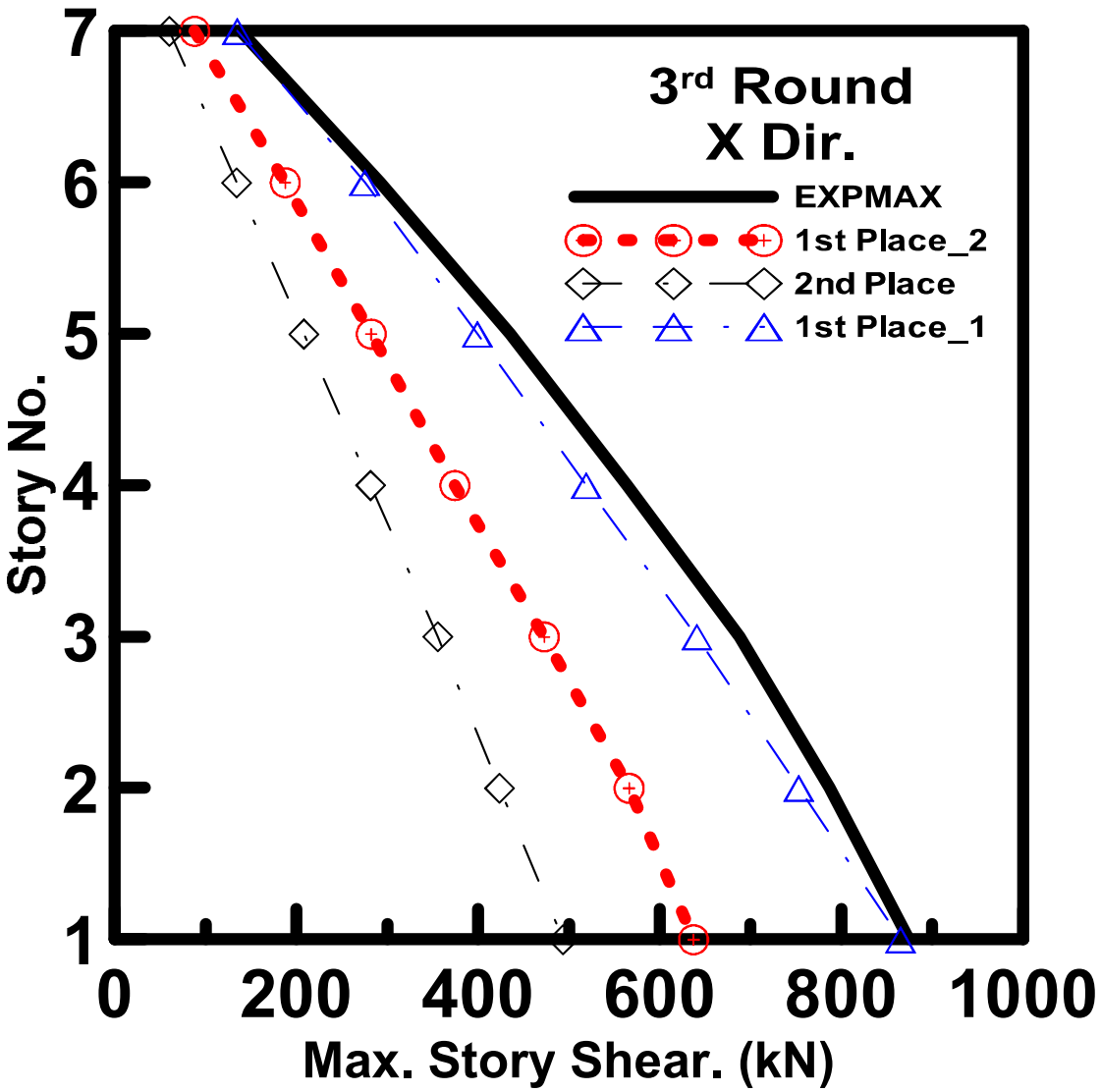
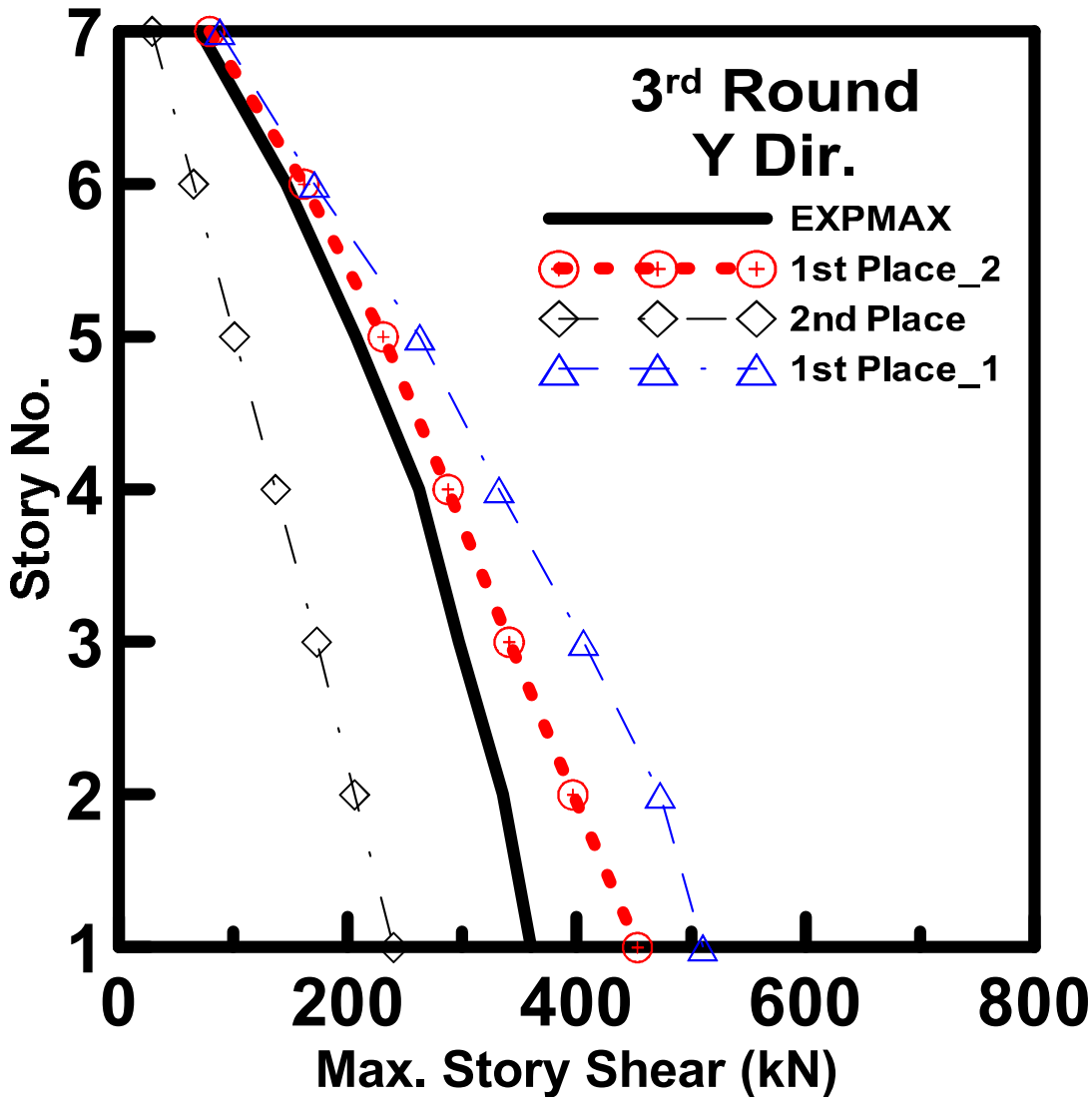
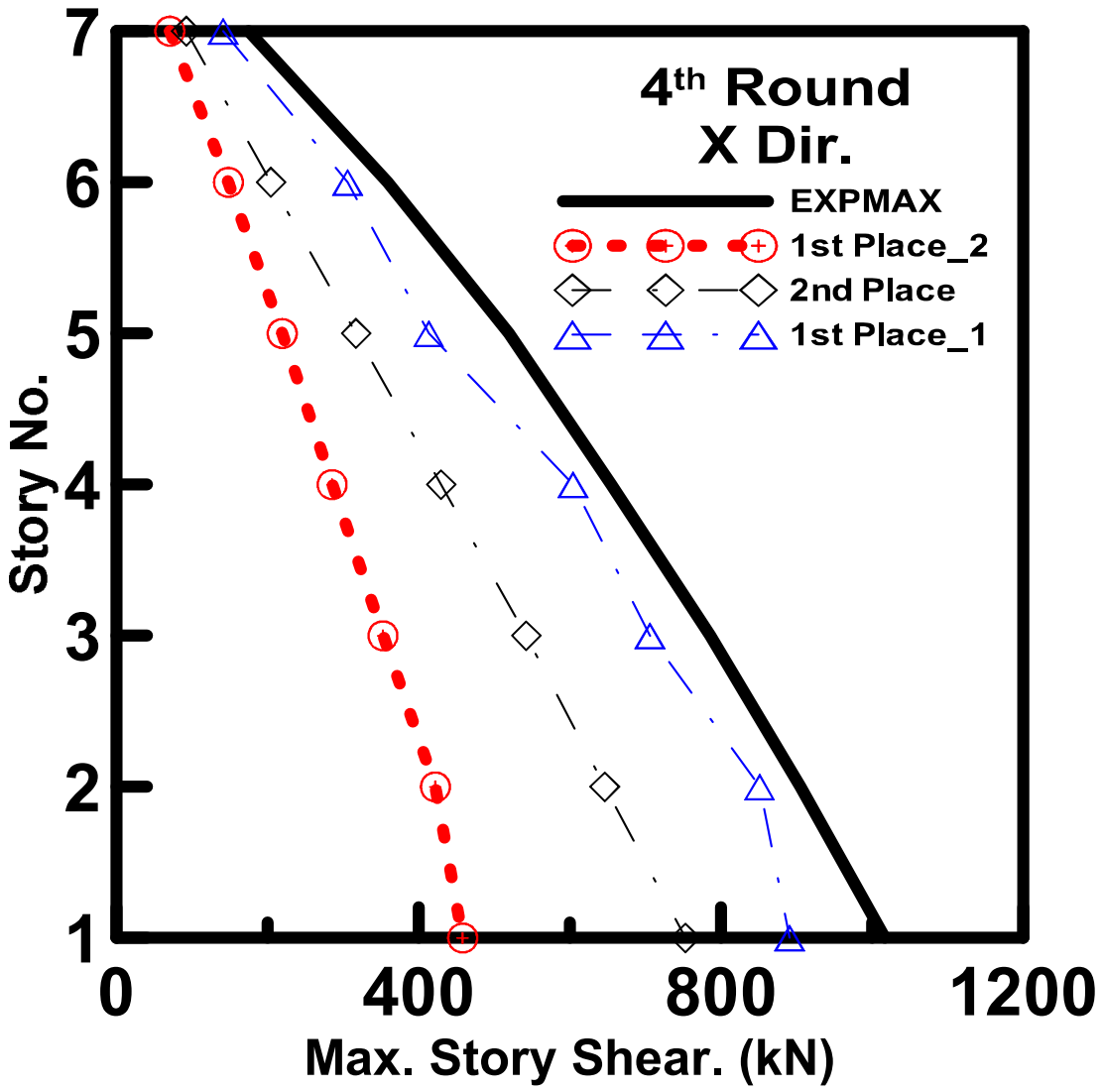
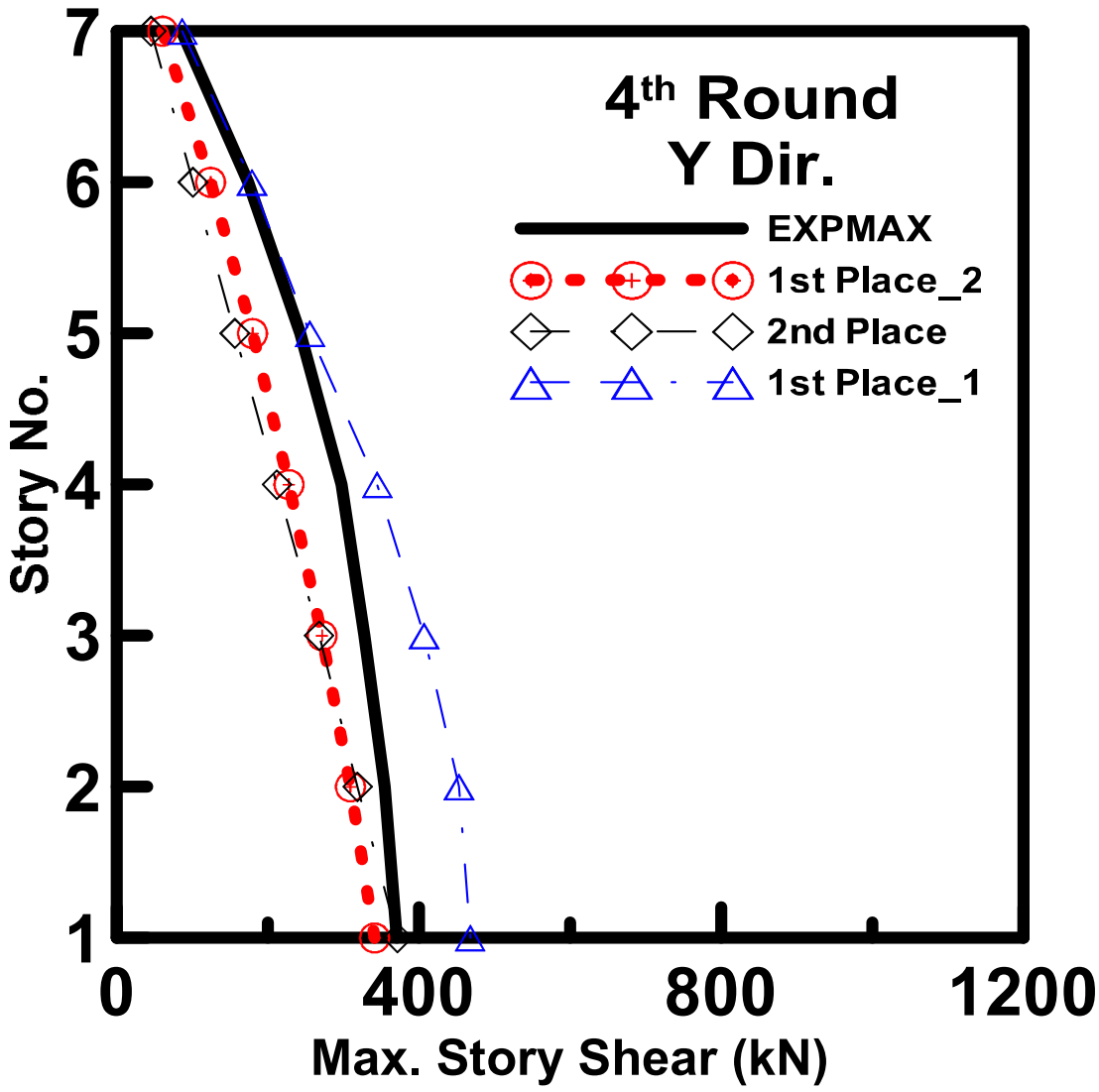
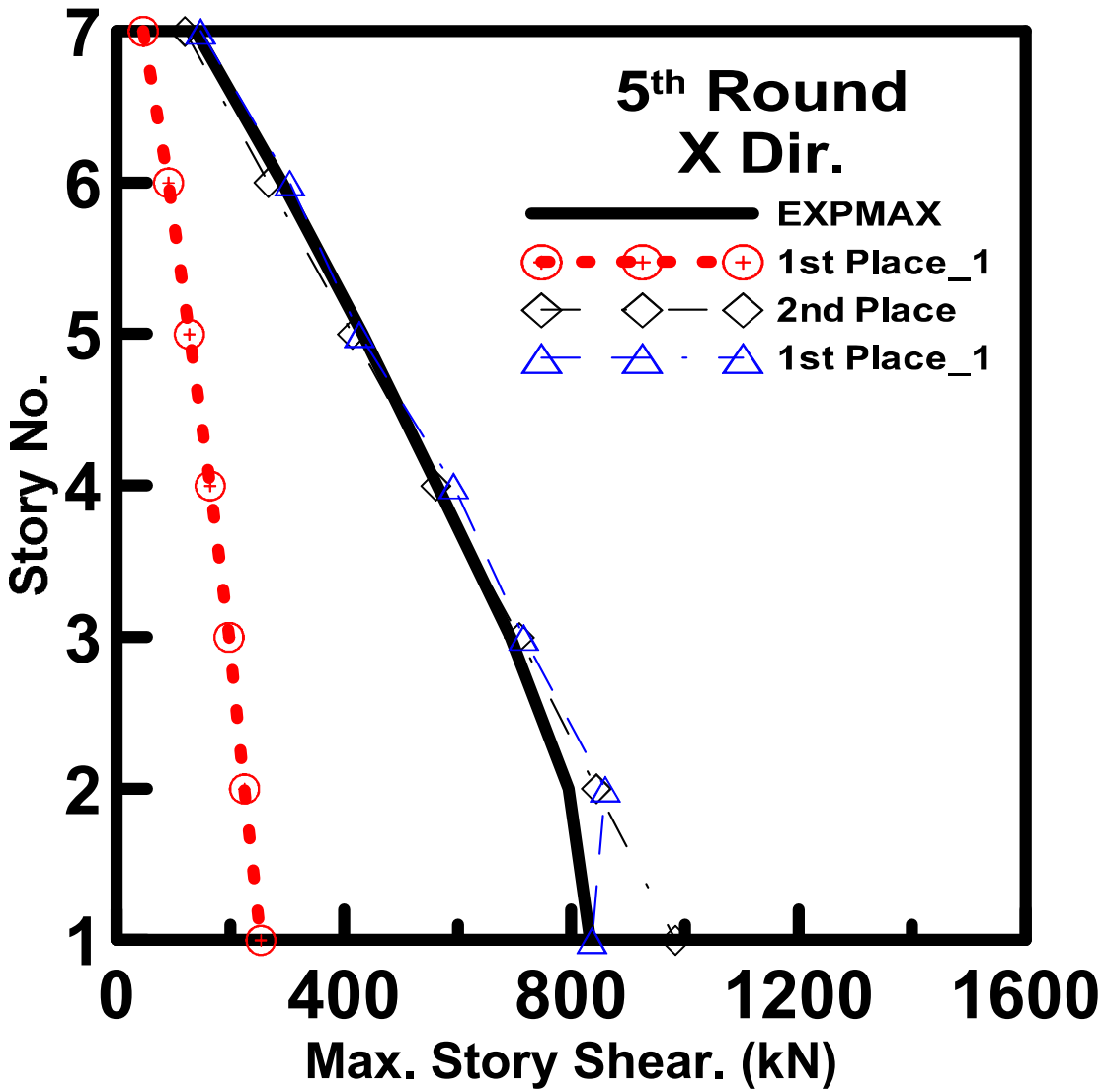
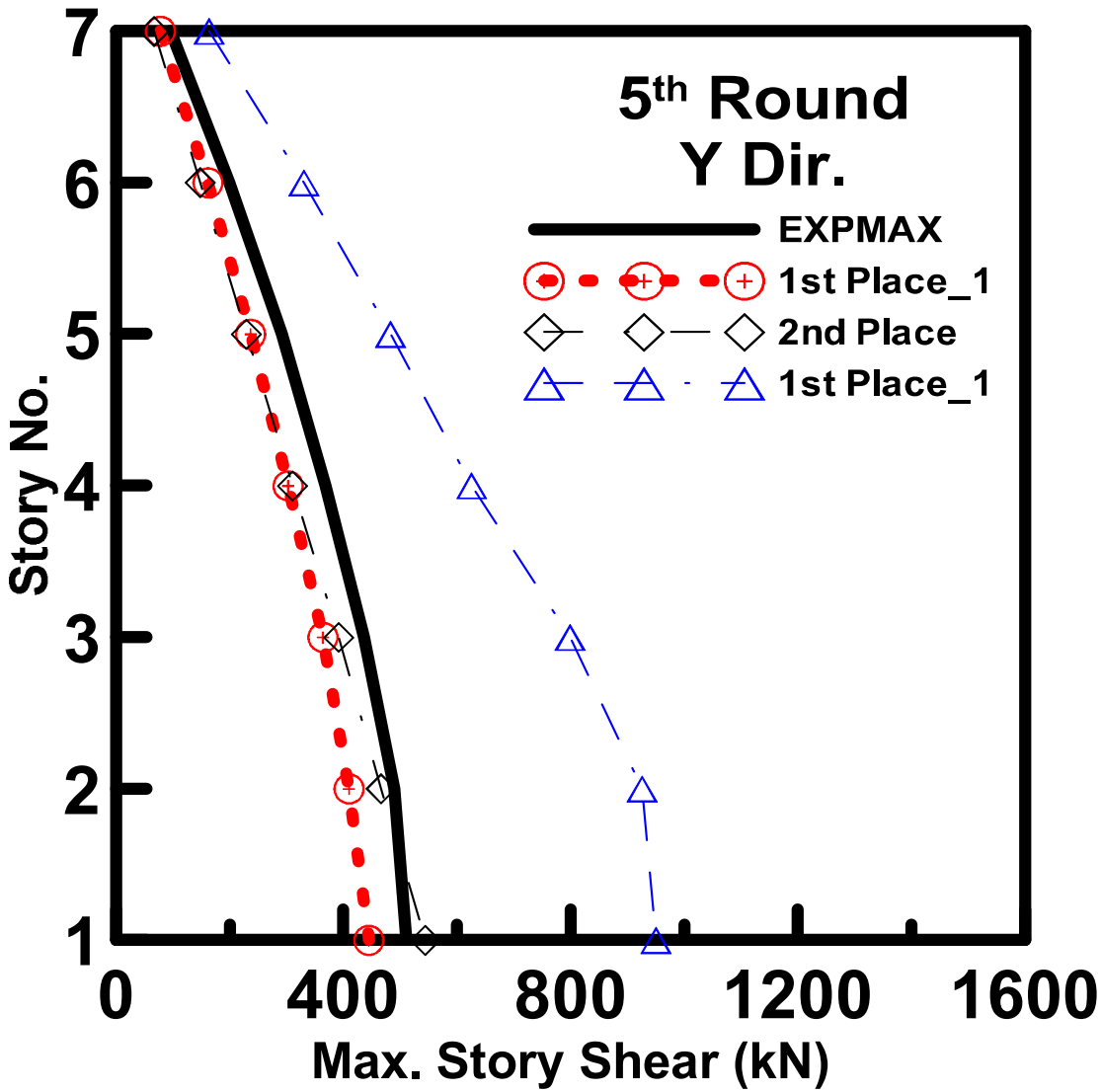

3rd Round
X Dir.
EXPMAX
1st Place_2
2nd Place
1st Place_1
Story No.
Max. Story Shear. (kN)
0
200
400
600
800
1000
1
2
3
4
5
6
7


3rd Round
Y Dir.
EXPMAX
1st Place_2
2nd Place
1st Place_1
Story No.
Max. Story Shear (kN)
0
200
400
600
800
1
2
3
4
5
6
7


4th Round
X Dir.
EXPMAX
1st Place_2
2nd Place
1st Place_1
Story No.
Max. Story Shear. (kN)
0
400
800
1200
1
2
3
4
5
6
7


4th Round
Y Dir.
EXPMAX
1st Place_2
2nd Place
1st Place_1
Story No.
Max. Story Shear (kN)
0
400
800
1200
1
2
3
4
5
6
7





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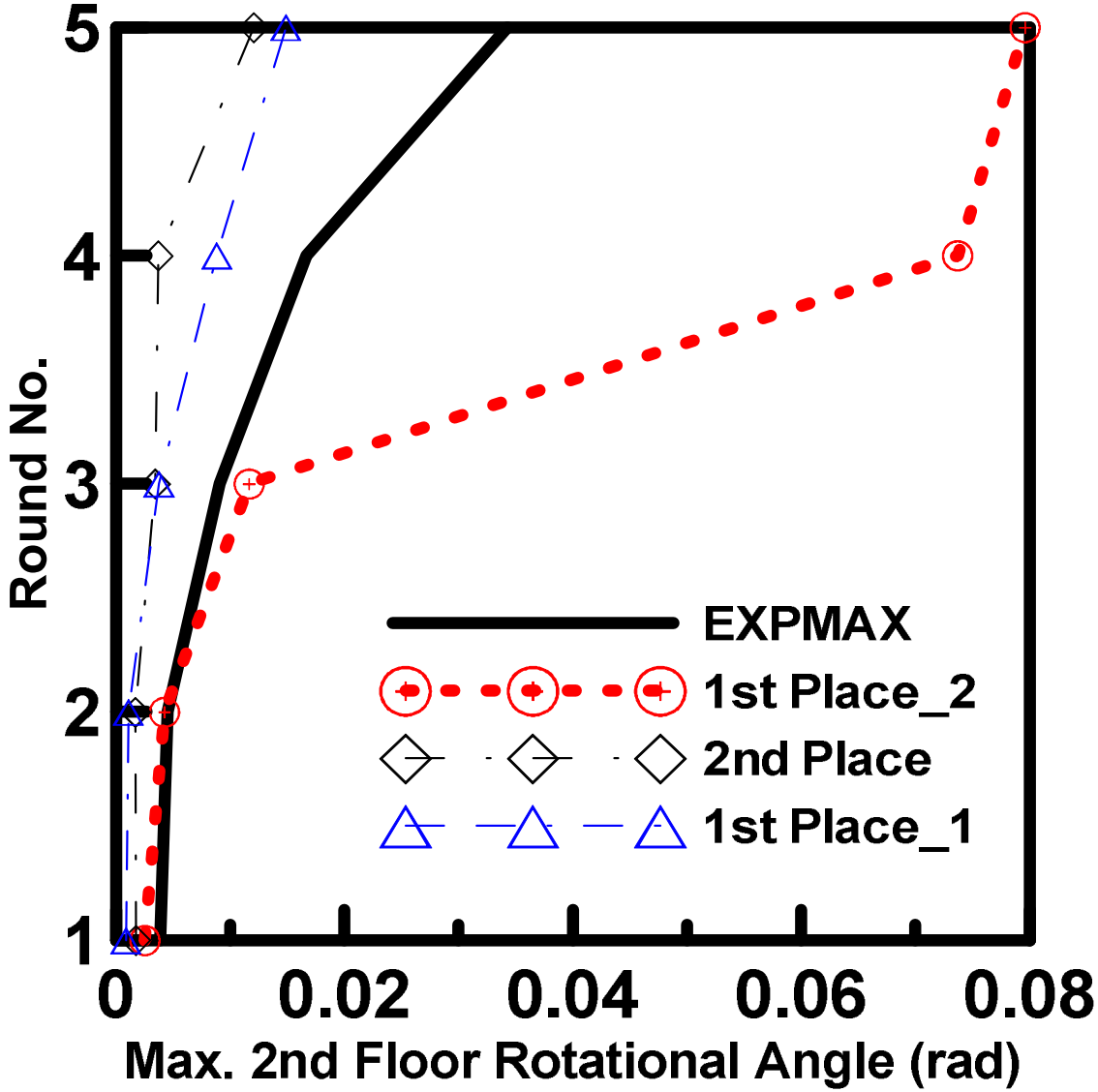
5
4
3
2
1
Round No.
0
0.02
0.04
0.06
0.08
Max. 2nd Floor Rotational Angle (rad)
EXPMAX
1st Place_2
2nd Place
1st Place_1

National Center for Research on Earthquake Engineering

～ Winners ! ～

1st Place:

Yasunori Mizushima , Takuya Kinoshita, Yuki Idosako and Hiroto Takatsu

Research and Development Institute, Takenaka Corporation, Chiba, Japan

1st Place:

Riku Sakamoto*, Zhang Kaiwei*,Li-Wei Yu**, Kuang-Yen Liu**

*Kozo Keikaku Engineering, Tokyo, Japan

**National Cheng Kung University, Tainan, Taiwan

2nd Place:

Xinlei Jin and Chi Zhang (金鑫磊和张弛)

Department of Civil Engineering, Tsinghua University, Beijing, China.

Awards

Awards will be given in a special ceremony at the **International Conference on Earthquake Engineering in Commemoration of the 20th Anniversary of the 1999 Chi-Chi Earthquake.** A representative of each winning team will be invited to this conference that will be held in Taipei, September 15-19, 2019. NCREE will cover the registration fee and accommodation expenses for the winners' participation in the conference. The representative will be asked to make a short presentation on the techniques used (model and analysis) in making the winning predictions. The awards for the 1st – and 2nd –place teams are US$2,000 and US$1,500, respectively.

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