

Suspension Test

—Rotation

—Baseline & Settlement

J. JIAO, C. FENG

SHANDONG UNIV.

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Test of Rotation

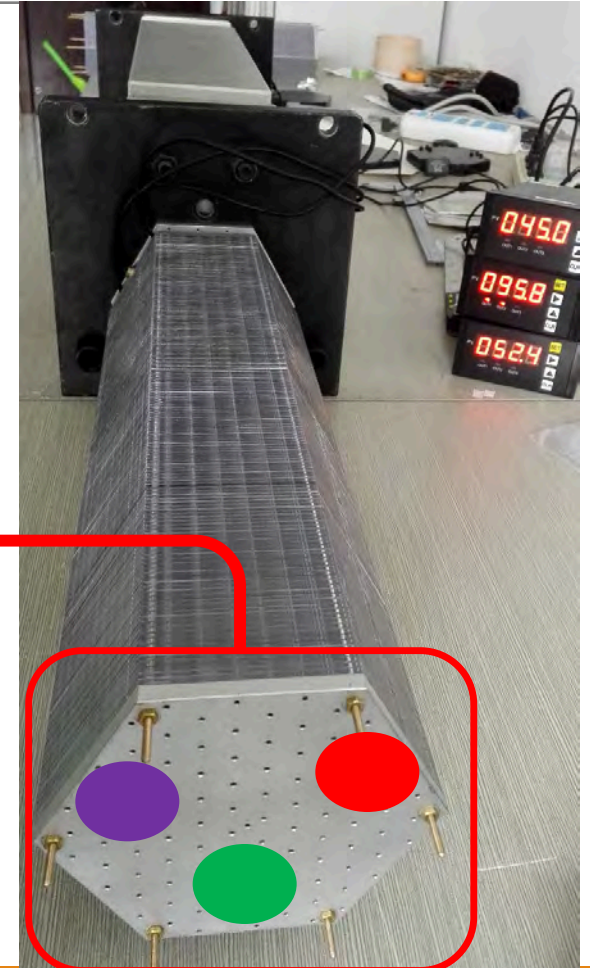
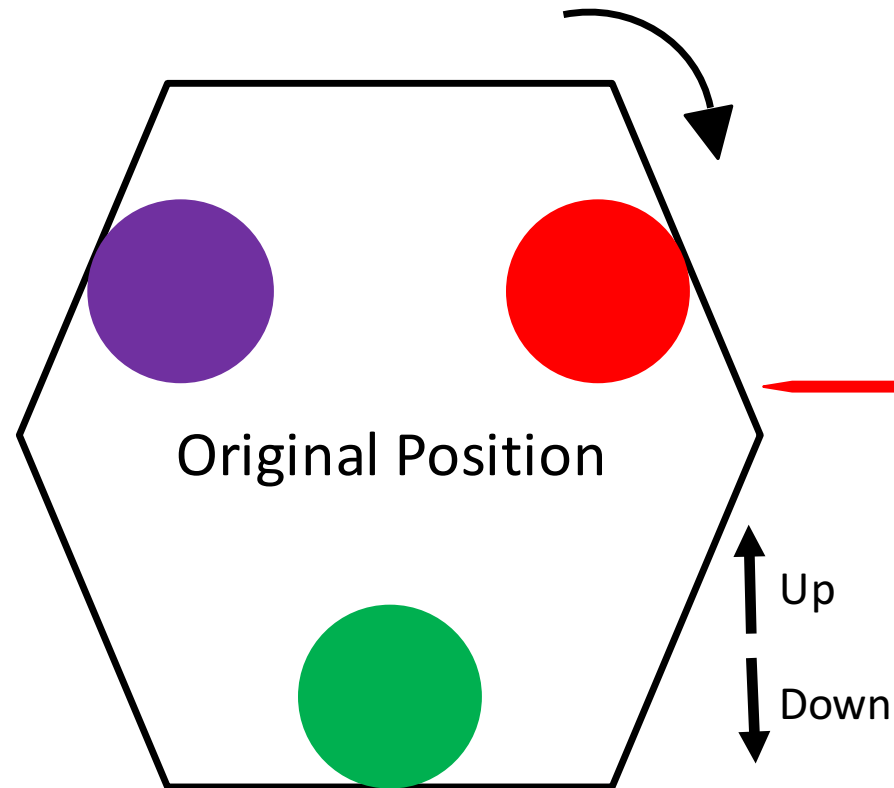
We rotated the module along its axis and tested the force change in different angles

- The temperature is 24.5°C

Four angles were tested:

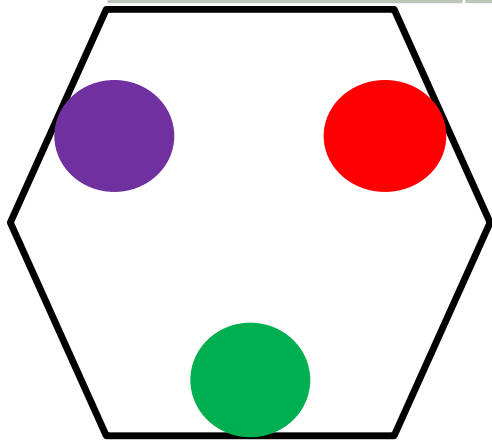
- 0° (Original position)
- 90°
- 180°
- 270°

The 3 colored rounds show the positions of 3 sensors

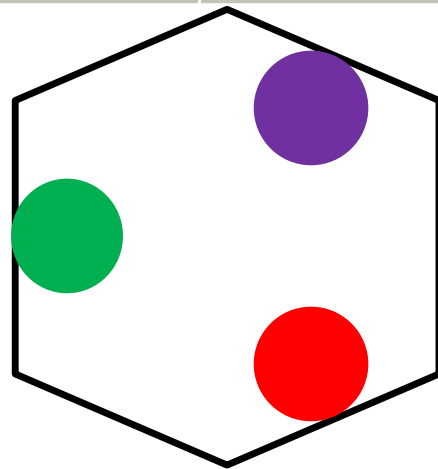


We rotated the module in clockwise, the readings of 3 sensors changed, but the sum of them are almost the same.

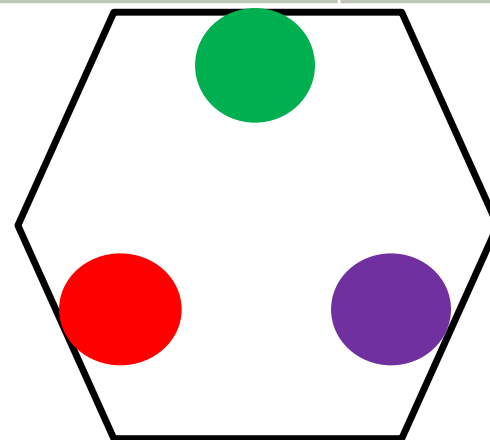
	0°	90°	180°	270°	0°
	42.4	83.6	71.1	34.8	44.6
	96.0	64.2	36.5	64.3	96.1
	51.0	41.8	80.7	90.4	52.0
Total	189.4	189.6	188.3	189.5	192.7



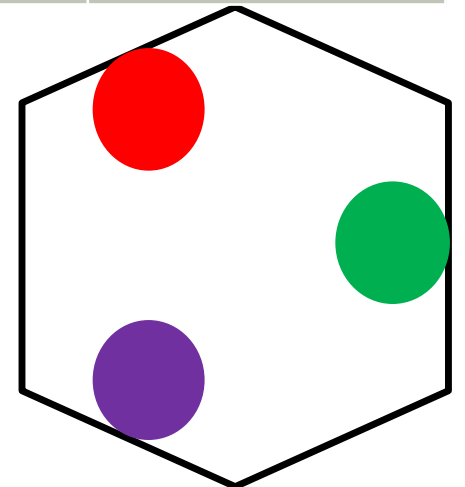
0°



90°



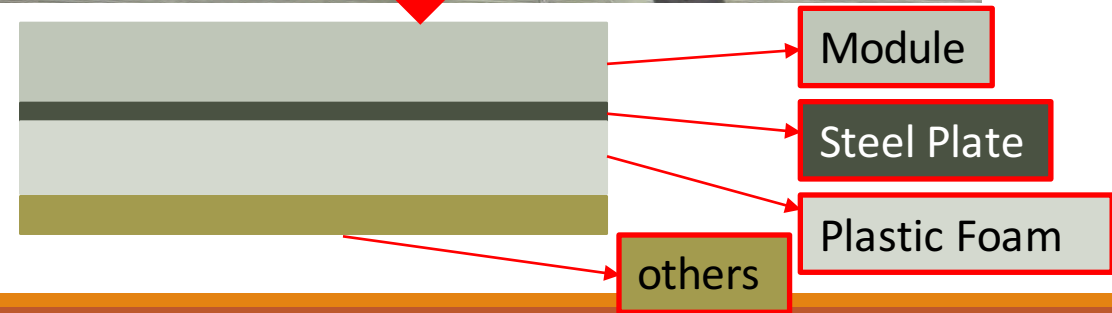
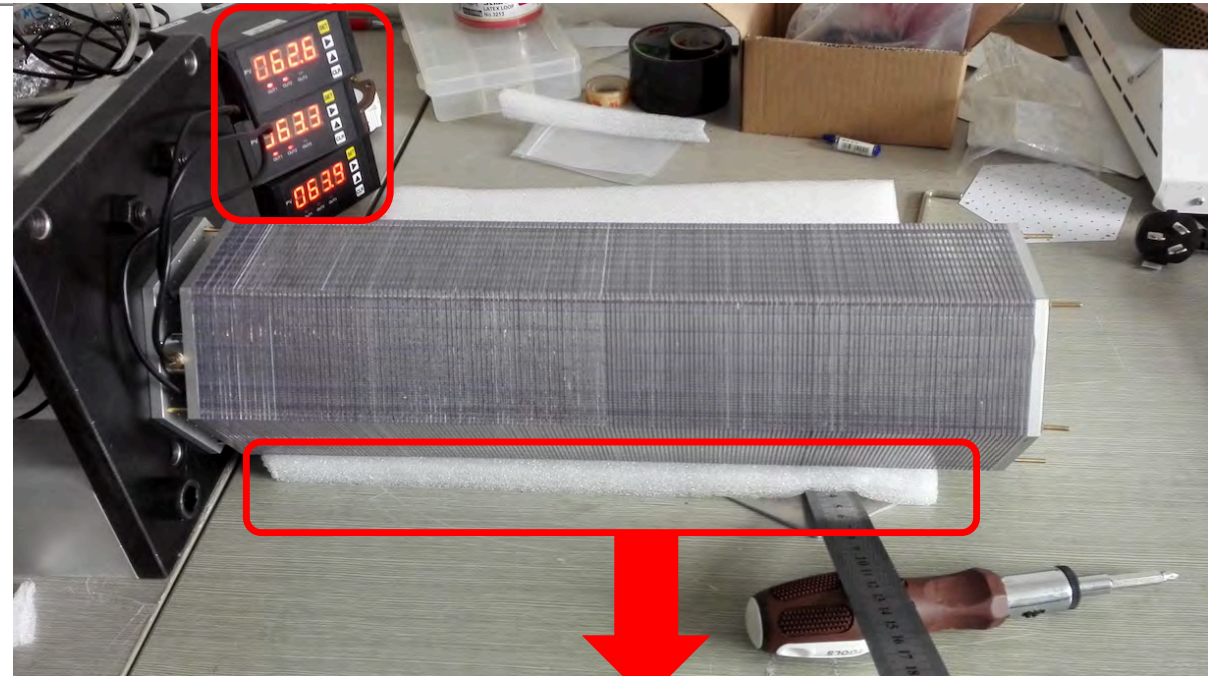
180°



270°

Baseline & Settlement

- The temperature is 24.8°C
- Put supporting plates under the hanging module to adjust the force readings of sensors.
- Stop to increase the height of supporting plates when the readings of 3 sensors are almost the same (differences between any 2 readings < 2 KG, 1% of pre-setting force)



Baseline & Settlement

- Measure the current height (h) between the upper side of remote end and the surface of table with a micrometer. ($h = 12.912$ cm)
- Remove all the supporting plates, measure the h again. ($h = 12.710$ cm)
- The difference of h values before & after removing supporting plates is the settlement of remote end (Δh) when the module is hanging with single-end.
- $\Delta h = 2.02$ mm, while the test module is only 170 layers (~41.7 cm of height)

	Before Test	With Surp. Plates	After Test	30 h later
Sensor 1	45.4	62.7	45.0	44.5
Sensor 2	95.8	63.6	98.0	98.8
Sensor 3	52.4	63.7	52.3	52.4
Total	193.6	190.0	195.3	195.7
h	/	12.912	12.710	12.714



Next to do

- The outer monitor is doing upgrade now, will be received this week. Then we can:
 - Test the relationship between the pre-setting pressure and the transferred force
 - Re-adjust the force in rods of the old module
 - Insert fibers to the module to do the fiber shaping
 - Set up a test system of module
 - Test the module with cosmic ray or radiation source

Thanks!