UM-SJTU Joint Institute
Physics Laboratory
Data Sheet (Exercise 3)

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Group: 14 Date: 2019/07/26

NOTICE. Please remember to show the data sheet to your instructor before leaving the laboratory. The data sheet will not be accepted if the data are recorded with a pencil or modified with a correction fluid/tape. If a mistake is made in recording a datum item, cancel the wrong value by drawing a fine line through it, record the correct value legibly, and ask your instructor to confirm the correction. Please remember to take a record of the precision of the instruments used. You are required to hand in the original data with your lab report, so please keep the data sheet properly.

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spring 1 [cm] ± 0.01 [cm]		spring 2 [cm] ± 0.01 [cm]		series [cm] ± 0.01 [cm]	
L_0	6.03	L_0	5.69	L_0	9.84
L_1	8.08	L_1	7.55	L_1	13.58
L_2	10.09	L_2	9.45	L_2	17.58
L_3	12.30	L_3	11.37	L_3	21.54
L_4	14.50	L_4	13.25	L_4	25.65
L_5	16.69	L_5	15.18	L_5	29.66
L_6	18.83	L_6	17.10	L_6	33.81

Table 1. Spring constant measurement data.

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ten periods [ms] ± 0.000 [s]					
horizontal		incline 1		incline 2	
m_1	12648.1	m_1	12597.3	m_1	12616.0
m_2	12763.6	m_2	12765.7	m_2	12772.5
m_3	12920.3	m_3	12933.0	m_3	12911.2
m_4	13061.7	m_4	~~136~~ 13069.9	m_4	13086.1
m_5	13207.7	m_5	13225.8	m_5	13248.1
m_6	13353.4	m_6	13380.7	m_6	13387.5

Table 2. Measurement data for the T vs. M relation.

A [cm] ± 0.1 [cm]		ten periods [ms] ± 0.000 [s]
1	6.0	13378.8
2	10.0	13380.0
3	15.0	13388.4
4	20.0	13393.0
5	25.0	13392.9
6	30.0	13394.0

Table 3. Data for the T vs. A relation.

A [cm] ± 0.1 [cm]		Δt [ms] ±0.0000 [s]
1	5.0	42.44
2	10.0	21.54
3	15.0	14.11
4	20.0	10.58
5	25.0	8.48
6	30.0	7.07

x_{in} [mm] ± 0.02 [mm]	x_{out} [mm] ± 0.02 [mm]
4.50	15.42
4.50	15.42
4.50	15.42

Table 4. Data for the v_{max}^2 vs. A^2 relation.

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m [g] ± 0.01 [g]	
1	4.70
2	9.41
3	14.17
4	19.01
5	23.81
6	28.61

Table 5. Weight measurement data.

object with I-shape m_{obj} [g] ± 0.01 [g]	
177.22	
object with U-shape m_{obj} [g] ± 0.01 [g]	
185.37	
mass of springs 1 & 2 $m_{\text{spr1\&2}}$ [g] ± 0.01 [g]	
21.32	
equivalent mass $M_0 = m_{\text{obj}} + \frac{1}{3}m_{\text{spr1\&2}}$ [g]	
I-shape	184.33
U-shape	192.48

Table 6. Mass measurement data.

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