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

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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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from 5 ~ 10

spring 1 [cm] ± 0.01 [cm]		spring 2 [cm] ± 0.01 [cm]		series [cm] ± 0.01 [cm]	
L_0	2.55 ☆	L_0	6.12	L_0	6.46
L_1	4.72	L_1	8.05	L_1	10.50
L_2	6.80	L_2	9.94	L_2	14.41
L_3	8.86	L_3	~~11.81~~ 11.81	L_3	18.40
L_4	11.03	L_4	~~13.73~~ 13.73	L_4	22.52
L_5	13.13	L_5	~~15.64~~ 15.64	L_5	26.58
L_6	15.25	L_6	17.55	L_6	30.52

Table 1. Spring constant measurement data.

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ten periods [ms] ± 0.1 [ms]					
horizontal		incline 1		incline 2	
m_1	12572.1	m_1	12559.8	m_1	12564.4
m_2	12719.0	m_2	12723.4	m_2	12713.5
m_3	12873.5	m_3	12877.6	m_3	12881.3
m_4	13041.9	m_4	13030.1	m_4	13033.5
m_5	13195.7	m_5	13189.4	m_5	13169.0
m_6	13340.7	m_6	13349.3	m_6	13325.0

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

A [cm] ± 0.1 [cm]		ten periods [ms] ± 0.1 [ms]
1	5.0	12406.6
2	10.0	12399.5
3	15.0	12400.3
4	20.0	12412.3
5	25.0	12410.7
6	30.0	12411.7

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

A [cm] ± 0.1 [cm]		Δt [ms] ± 0.01 [ms]
1	5.0	40.85
2	10.0	20.86
3	15.0	13.92
4	20.0	10.46
5	25.0	8.38
6	30.0	7.13
x_{in} [mm] ± 0.02 [mm]		x_{out} [mm] ± 0.02 [mm]
~~5.1~~ 5.02		~~15.1~~ 15.08
5.00		15.08
5.02		15.06

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

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m [g] ± 0.01 [g]	
1	~~4.76~~ 4.74
2	9.45
3	14.21
4	19.05
5	23.85
6	28.67

Table 5. Weight measurement data.

object with I-shape m_{obj} [g] ± 0.01 [g]	
176.87	
object with U-shape m_{obj} [g] ± 0.01 [g]	
191.30	
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	183.98
U-shape	198.41

Table 6. Mass measurement data.

Instructor's signature: Mano