

UNIVERSITI TEKNOLOGI MARA

TECHNICAL REPORT

**ANALYSIS OF CORD DISPLACEMENT FOR SAFE BUNGEE
JUMPING BY USING ORDINARY DIFFERENTIAL EQUATION
AND NEWTON LAW**

P23M19

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IN THE NAME OF ALLAH, THE MOST GRACIOUS, THE MOST MERCIFUL

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TABLE OF CONTENTS

ACKNOWLEDGEMENTS	i
LIST OF TABLES	iii
LIST OF FIGURES	iii
ABSTRACT	iv
1. INTRODUCTION	1
1.1 Problem and Solution.....	2
1.2 Objectives	2
1.3 Significance.....	3
1.4 Scope and Limitation of The Project	3
2. BACKGROUND THEORY AND LITERATURE REVIEW	5
2.1 Background Theory	5
2.1.1 Newton' s Second Law	5
2.1.2 Hooke's Law	5
2.1.3 Simple Harmonic Motion	6
2.2 Literature Review.....	6
2.2.1 History of Bungee Jumping	7
2.2.2 Type of Cord.....	7
2.2.3 Factors Influencing Bungee Jumping	7
3. METHODOLOGY AND IMPLEMENTATION	9
3.1 Develop an equation using Newton's Second Law and Ordinary Differential Equation.	10
3.2 Solving the homogenous equation.....	11
3.2.1. Case 1 (greater than zero)	12
3.2.2. Case 2 (equal to zero)	12
3.2.3. Case 3 (less than zero)	13
3.3 Solving for the particular solution	14
3.4 General Solution	15
4. RESULTS AND DISCUSSION	16
4.1 Test Data	16
4.2 Finding Equation of Motion.....	17
4.3 Graph.....	20
CONCLUSIONS AND RECOMMENDATIONS	22
REFERENCES	23
APPENDIX A	25
APPENDIX B	26

LIST OF TABLES

Table 1 : List of variables 10
Table 2 : Some example of data that are used in the model..... 16
Table 3: The data of jumper A 17
Table 4 : The comparison of the actual displacement and estimated displacement 21

LIST OF FIGURES

Figure 1 : Stages of modelling process 9
Figure 2 : Estimated displacement of jumper A, displacement(x) vs time(t) 20

ABSTRACT

Extreme sports such as Bungee Jumping, Rock Climbing, and Flying Fox are currently trending among teenagers and also them who loves outdoor activities. This is because these kinds of activities are challenging and exciting. This kind of sports also trains people to go against their fear. In Bungee Jumping, for instance, people were trained to go against the fear of jumping from a high platform. Caution steps must be taken to avoid an accident to occur. Thus, this paper proposed the calculation of the safe jump regardless of the weight, height and also type of cord used during the jump. The writer aimed to identify factors involved in the bungee jumping sport and also calculate the displacement of the jumper using the Differential Equation method in order to make sure the safety of every jump. While writing this paper, the writer experienced jumping at the Sunway Lagoon Extreme Park. Their jumping was recorded and few data were collected. Different data of jump were next calculated using Differential Equation to compare the result from the actual jump they the writers get from the observation and collection from the Sunway Lagoon. Later, the calculation was compared with the actual data. The safety jump is determined by the lower percentage error when the writers compare the results with the actual data. Thus, the method used is easy, understandable and reliable to even be used to any other field of mathematics with a wide range of cases and phenomenon.