



# 美赛论文格式规范

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《美国数学建模竞赛》

完整课程请长按下方二维码





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# 页面格式





# 页面格式

For office use only

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T3 \_\_\_\_\_  
T4 \_\_\_\_\_

Team Control Number

**1900074**

Problem Chosen

**B**

**2019**  
**MCM/ICM**  
**Summary Sheet**

## Research on Airborne Responsive Response

Puerto Rico was hit by a hurricane, causing major damage, completely paralyzed, and medical needs continued to increase. At present, we need to develop an aerial disaster relief response system with the help of the existing data and requirements, this paper studies the UAV operation, establishes an air disaster rescue response system to provide rapid response.

For question 1, design the relevant packaging solutions for containers. We have built a three-dimensional containerized transport according to the demands, the drones are sorted by the principal component evaluation method, and the initial allocation quantities of the containers are determined according to the distribution ratio. Optimize the number of drone distribution containers, and finally the number of different drones required and the medical kit are obtained. The specific results are shown in Tables 1 to 4.

For question 2, determine the best location for the cargo container rescue location model. First, the image is discretized, and the latitude and longitude cluster are determined according to the position of the known latitude and longitude cluster, thereby obtaining the distance between the cluster and the demand point. Finally, the optimal location is determined by the distance and the demand point.

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# 1 Introduction

## 1.1 Background

The Puerto Rico region was hit by a hurricane in 2017, causing severe damage to the island. A large number of utility poles and transmission lines were damaged, causing the island to lose power. In addition, the storm destroyed most of the island's communications network. Floods blocked and destroyed highways and roads on the island, making ground emergency rescue impossible to plan and navigate routes. The survival of Puerto Rican residents is seriously threatened and the demand for health care continues to surge. In order to provide medical supplies, the non-governmental organization HELP, Inc. took relief actions. Use the drone to transport medical supplies to parts of Puerto Rico and to take aerial video reconnaissance to repair the road. Drone will be shipped to Puerto Rico in an



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## 7 Appendix

### Appendix 1

#### Question one

```
clear;clc;
Load=[14 15 22 20]'; %Max Payload
Capability(C E F G)
Meth1=[2 0 0;0 0 2;1 0 1;0 4 0; 1 2 0; 0 2
1];
WA=2;   WB=2;   WC=3;
Meth2={};
for i=1:length(Load)
    w=[];
    for wai=11:-1:0
        for wbi=11:-1:0
            for wci=11:-1:0
```

```
                break;
            end
        end
        %% Find the load of the first and second
        principal components
        result=[6,3];
        for d=1:length(znum)
            for q=1:length(leva1)

result(q,d)=sqrt(neval(znum(d)))*fvec(q,znu
m(d));
            end
        end
    end
```



## 页面格式

- 1. 最终文档一定是pdf，用官网生成的控制号命名
- 2. 建议就用word进行编辑，也可以用latex
- 3. 正文一定不要超过20页
- 4. 目录页可有可无
- 5. 概要页建议不超过1页



# 论文构成





## 论文构成

### 写作的基本要素

首页：题目、摘要、关键词

标题 Please Center *use Arial 14*

概要 Summary : 三部分，第一是背景介绍，2-4行左右就行，  
第二是主体部分，第三是结尾，一般阐述模型的优点与不足

关键词 3-5个



## 论文构成

### 1) 问题的介绍 Introduction

问题的背景 Background of the Problem

文献综述（先前的工作） Previous Works

本文的工作 Our Work



## 论文构成

- 2) 符号的说明 Symbol Descriptions
- 3) 模型的假设 Model Hypothesis 也可放在每个问题里面
- 4) 模型的建立与求解 Our solutions:

问题的分析（分析框架、数学原理等）

模型建立（建模思路、模型建立）

模型计算（程序说明、结果阐述）

模型检验与灵敏度分析（可防止后面统一）

形成结果的原因分析



## 论文构成

- 5) 模型的推广 Model Extensions
- 6) 讨论与结论 Discussions and conclusions (政策性题目)
- 7) 模型的不足 The strengths and weaknesses of the model
- 8) 参考文献 References 建议10篇以上，文中最好注明
- 9) 附录 Appendix 附上核心代码