

MCM/ICM 注册和报名指导手册，由数学家(原校苑数模)翻译，为参赛老师和学生提供的帮助手册。

转载请注明来源：数学家（校苑数模）。

参照美赛官网：<http://www.comap.com/undergraduate/contests/mcm/instructions.php>

**MCM:** The Mathematical Contest in Modeling

**ICM:** The Interdisciplinary Contest in Modeling

**MCM:** 数学建模竞赛 **ICM:** 交叉学科建模竞赛

## Contest Rules, Registration and Instructions

### 比赛规则，注册和说明

*(All rules and instructions apply to both ICM and MCM contests.)*

*(所有规则和说明适用于 ICM 和 MCM 比赛。)*

To participate in a contest, each team may consist of a maximum of three students and must be sponsored by a faculty advisor from its institution.

参加比赛时，每个队伍最多可由三名学生组成，并必须有一名指导教师。

**Team Members:** A team may consist of up to three students from the same school and is open to all undergraduate and high school students.

团队成员：一个团队可以由同一所学校的三名学生组成，并且对所有本科和高中生开放。

**Team Advisors:** Any faculty, staff member, or student at your institution can fulfill the role of Advisor. The advisor will act as the main point of contact for the team, and does not have to be from the mathematics department. We do however encourage faculty members to serve as team advisors.

指导教师：您所在机构的任何教师，工作人员或学生都可以履行指导教师的职责。指导教师将作为团队的主要联络点，不必来自数学系。不过，我们鼓励教师担任指导教师。

Please print a copy of these contest instructions for reference before, during, and after the contest. **Click here for the printer friendly version.**

请在比赛之前，期间和之后打印这些比赛指南的副本以供参考。

**MCM-ICM: Procedures and Tips for a Great Experience**

## MCM-ICM: Procedures and Tips for a Great Experience (Chinese)

### MCM-ICM: 成功的实践过程和提示（内容见附件）

The purpose of this article is to assist and guide students and advisors participating in The Mathematical Contest in Modeling (MCM) and The Interdisciplinary Contest in Modeling (ICM). In the article, COMAP, provides information about the administration of the contests, as well as tips to ensure your contest experience is smooth, satisfying, and enjoyable.

本文的目的是帮助和指导参与数学建模竞赛（MCM）和交叉学科建模竞赛（ICM）的学生和指导老师。在文章中，COMAP 提供有关比赛管理的信息，从而确保您的比赛体验顺利、满意和令人愉悦。

#### I. BEFORE THE CONTEST BEGINS:

##### **A. Registration**

##### **B. Choose your team members**

#### I.比赛开始之前:

##### A.注册

##### B.选择你的团队成员

#### II. AFTER THE CONTEST BEGINS:

##### **A. View the contest problems via the contest web site**

##### **B. Choose a problem**

##### **C. Teams prepare solutions**

##### **D. Print Summary Sheet and Control Sheet**

#### II.比赛开始之后:

##### A.通过比赛网站查看比赛问题

##### B.选择一个问题

##### C.团队提供解决方案

##### D.打印摘要页和控制页

#### III. BEFORE THE CONTEST ENDS:

##### **A. Send electronic copy of Solution Paper by email**

#### III.在比赛结束之前:

##### A. 通过电子邮件发送解决方案的电子副本

**IV. WHEN THE CONTEST ENDS:****A. Prepare Control Sheet****B. Mail signed Control Sheet****IV. 当比赛结束时:****A. 准备控制页****B. 邮件签名控制页****V. AFTER THE CONTEST IS OVER:****A. Confirm that your team's solution was received****B. Check contest results****C. Prizes/Certificates****V. 比赛结束后:****A. 确认您的团队解决方案已收到****B. 检查比赛结果****C. 奖品/证书****2019 Contest changes/updates can be found in red below:****2019 比赛更改/更新可以在下面的红色中找到:**

- MCM/ICM is an all electronic submission!
- MCM / ICM 提交的全是电子版!
- You are not required to mail a print copy of your Solution Paper.
- 您不需要邮寄您的解决方案纸的打印副本。
- You are not required to mail a print copy of your signed Control Sheet.
- 您不需要邮寄您签名的控制页的打印副本。
- We have added 3 hours to the contest start time to allow for teams to download, read, discuss, and choose a problem. Teams can view the contest problems via the contest web site when the contest begins at 5PM EST on Thursday January 24, 2019.
- 我们已经在比赛开始时间增加了 3 个小时, 以便团队下载, 阅读, 讨论和选择问题。在 2019 年 1 月 24 日星期四美国东部时间下午 5 点, 团队便可以通过比赛网站查看比赛问题。

**2019 Contest dates and times:****2019 比赛日期和时间:**

- **Registration Deadline:** Before 3PM EST on Thursday, January 24, 2019.
- 注册截止日期：2019 年 1 月 24 日（星期四）美国东部标准时间下午 3 点前。
- **Contest Starts:** 5PM EST on Thursday, January 24, 2019.
- 比赛开始：2019 年 1 月 24 日，（星期四）美国东部标准时间下午 5 点。
- **Contest Ends:** 8PM EST on Monday, January 28, 2019.
- 比赛结束：2019 年 1 月 28 日，（星期一）美国东部标准时间下午 8 点。
- **Email Submission Deadline:** 9PM EST on Monday, January 28, 2019.
- 电邮提交截止日期：2019 年 1 月 28 日，（星期一）美国东部标准时间下午 9 点。
- **Control Sheet Submission Deadline:** 5PM EST on Friday, February 8, 2019.
- 控制表提交截止日期：2019 年 2 月 8 日，（星期五）美国东部标准时间下午 5 点。
- **Contest Results:** The results will be posted on April 29, 2019.
- 比赛结果：结果将于 2019 年 4 月 29 日发布。

#### **IMPORTANT NOTES:**

##### **重要事项:**

- **COMAP is the final arbiter of all rules and policies, and may disqualify or refuse to register any team that, in its sole discretion, does not follow these contest regulations and procedures.**
- COMAP 是所有规则和政策的最终仲裁者，可能会取消资格或拒绝注册任何不遵守这些比赛规则和程序的团队。
- **Decisions of the judges, the contest directors, and the editor of The UMAP Journal are final.**
- 阅卷专家，比赛主任，“UMAP 杂志”编辑的决定是最终决定。
- **If a team is caught violating the rules, the faculty advisor will not be permitted to advise another team for one year, and the advisor's institution will be put on probation for one year.**
- 如果一个团队违反规定，该团队的指导教师一年之内将不被允许参赛，而且该团队所在学校将被待考察（试用）一年。
- **If a team from the same institution is caught violating the rules a second time, then that school will not be allowed to compete for a period of at least one year.**

- 如果来自同一学校的小组第二次被抓住违反规定，那么该学校至少一年内将不能参赛。
- **All times given in these instructions are in terms of Eastern Standard Time (EST). (COMAP is located in the U.S. Eastern Time zone.)**
- 本说明书中的所有时间均以东部标准时间（EST）为准。（COMAP 位于美国东部时区。）

**By submitting an entry, team members agree that:**

通过提交条目，团队成员同意：

- **Their submission and all rights to its publication become the property of COMAP, Inc.**
- 他们的出版物和出版物所有权归 COMAP, Inc 所有。
- **COMAP may use, edit, excerpt, and publish this submission for promotional use or any other purpose, including placing it online, distributing it electronically, or publishing it in The UMAP Journal or otherwise, without compensation of any kind.**
- COMAP 可以以任何目的使用，编辑，摘录和发布提交内容，包括将其在线，以电子方式分发，或在 UMAP Journal 或其他方式发布，同时这都是无偿的。
- **COMAP reserves the right to use in materials relating to this contest, the names of the team members, their advisor(s), and their affiliations, without further notification, permission, or compensation.**
- COMAP 保留使用与本次比赛有关材料，团队成员，指导教师及相互关系的名称的权利，恕不另行通知，许可或补偿。
  - **and team members assert that**
  - 团队成员需要承诺
- **All images, figures, photographs, tables, and drawings in their submission were either created by the team or else, if reproduced from another source, the submission cites a specific reference for each at its location in the submission.**
- 他们提交的所有照片、表格和所绘图片都是由小组原创的，否则，如果是参考别处的，提交材料在其提交的每一个位置都应做上参考。
- **All direct quotations in the submission are enclosed in quotation marks or otherwise identified as such, with a specific reference cited for each at its location in the submission.**

- 提交文件中的所有直接引用文件都用引号括起来，或以其他方式标识，并在提交的所在位置引用具体的参考资料。
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## I. BEFORE THE CONTEST BEGINS:

### I.在比赛开始之前:

#### A. Registration

##### A.注册

**All teams must be registered before 3PM EST on Thursday, January 24, 2019.**

We recommend that all teams complete the registration process well in advance, since the registration system will not accept any new team registrations after the deadline. COMAP will not accept late registrations for MCM/ICM 2018 **under any circumstances. NO**

**EXCEPTIONS WILL BE MADE.**

所有队伍必须在 **2019 年 1 月 24 日（星期四）东部时间下午 3 点之前注册**。我们建议所有团队提前完成注册过程，因为注册系统将不会在截止日期之后接受任何新的团队注册。在任何情况下，**COMAP** 将不会接受 **MCM / ICM 2018** 的延迟注册。**不会有例外。**

1. **Register your team online via the contest web site:** Go to <http://www.comap.com/undergraduate/contests/mcm>.

1、在线注册您的团队通过大赛网站：转到

<http://www.comap.com/undergraduate/contests/mcm>。

a. If you are registering your first team for this year's contest, click on **Register for Contest** on the left-hand side of the screen.

Enter all the required information, including your email address and contact information.

**IMPORTANT:** Be sure to use a valid and current email address so that we can use it to contact you at any point before, during, and after the contest, if necessary.

a.如果您在今年比赛中是第一次注册队伍，请点击屏幕左侧的“**Register for Contest**”。

输入所有必需的信息，包括您的电子邮件地址和联系信息。

**重要提示：**请务必使用有效的当前电子邮件地址，以便我们必要时候可以在比赛之前，期间和之后的任何时候使用它与您联系。

b. If you have already registered a team for this year's contest and want to register a second team, click on **Advisor Login**, then log in with the same email address and password that you used when you registered your first team. Once you're logged in, click on **Register Another Team** near the upper right corner of the page, then follow the instructions there.

**There is no restriction on the number of teams an advisor can register.**

b.如果您已经为今年的比赛注册了一个团队，并想要注册第二个团队，请点击“**Advisor Login**”，然后使用您注册第一个团队时使用的电子邮件地址和密码登录。登录后，点击页面右上角的“**Register Another Team**”，然后按照说明进行操作。指导教师注册的团队数量没有限制。

## 2. Registration Fee

### 2、报名费

A \$100 registration fee per team is required.

每个团队需要 **\$100** 注册费。

We accept payment with Mastercard or Visa only via our secure web site. We cannot accept other forms of payment. Our secure site will process your credit card payment, so your credit card number is protected. Our system will not store your credit card number after it processes your payment.

我们仅通过我们的安全网站接受万事达卡或 **Visa** 的付款。我们不能接受其他付款方式。我们的安全网站将处理您的信用卡付款，因此您的信用卡号将是安全的。处理您的付款后，我们的系统将不会存储您的信用卡号码。

3. After we receive approval from your financial institution (this takes only a few seconds), the system will issue a control number for your team. Your team is not officially registered until you have received a team **control number**. **Print the page that displays your team control number: It is your only confirmation that your team has been registered.** This page also lists the email address and password that you entered when registering; you will need this information to complete the contest procedures.

3、在获得金融机构的批准（这只需要几秒钟）后，系统将为您的团队发出控制号码。直到您收到**团队控制号**，您的团队才算正式注册。**打印显示您的团队控制号的页面：这是您唯一确认您的团队已注册的方法。**此页面还列出了您在注册时输入的电子邮件地址和密码。您将需要此信息才能完成比赛程序。

You will **NOT** receive an email confirmation of your registration

您注册时**不会**收到相应确认的电子邮件。

4. If you need to change any of the information (name, address, contact information, etc.) that you specified when you registered, you can do so at any point before or during the contest by logging in to the contest web site with the same email address and password that you used when registering (click on the **Advisor Login** link on the left side of the screen). Once logged in, click on the **Edit Advisor or Institution Data** link near the upper right corner of the page.

4、如果您需要更改注册时指定的任何信息（姓名、地址、联系信息等），您可以在比赛之前或期间的任何时间通过登录比赛网站(使用注册时使用的电子邮件地址和密码)（点击屏幕左侧的 **Advisor Login** 链接）。登录后，点击页面右上角附近的 **Edit Advisor or Institution Data** (编辑指导教师或学校数据)链接。

5. Check the contest web site regularly for any updated instructions or announcements about the contest. Except in extreme circumstances, COMAP will not send any confirmation, reminders, or announcements by email. All communication regarding the contest will be via the contest web site.

5、定期检查比赛网站有关比赛的更新说明或公告。除极端情况外，COMAP 不会通过电子邮件发送任何确认，提醒或通知。有关比赛的所有沟通将通过比赛网站。

6. You will return to the contest web site during the contest to enter and confirm information about your team, and to print/download out your team's Control Sheet and Summary Sheets, which you will use when preparing your team's solution. Details on these steps follow in the instructions below.

6、您将在比赛期间返回比赛网站，输入并确认您的团队信息，并打印/下载您团队的控制页和摘要页，您将在提供团队解决方案时使用该表。有关这些步骤的详细信息请参阅以下说明。

## **B. Choose your team members:**

### **B. 选择你的团队成员：**

1. You must choose your team members **before the contest begins at 5PM EST on hursday January 24, 2019**. Once the contest begins you may not add or change any team members (you may, however, remove a team member, if he or she decides not to participate).



1、你必须在比赛开始前选择你的团队成员，即 **2019 年 1 月 24 日美国东部时间下午 5 点之前**。一旦比赛开始，您不可以添加或更改任何队员（但是，如果他们决定不参加，您可以删除队员）。

2. Each team may consist of a maximum of three students. (Teams may consist of 1, 2, or 3 students).

2、每队最多都只能由 **3 名学生组成**。（团队可以由 **1,2 或 3 名学生组成**）。

3. Each student may participate on only one team.

3、每个学生只能参加一个队伍。

4. Team members must be enrolled in school at the time of the contest, but they need not be full-time students.

4、参加比赛的小组成员必须入学，但不一定得是全日制学生。

5. Team members must be enrolled at the same school as the advisor and other team members.

5、团队成员必须与指导教师和其他团队成员在同一所学校注册。

6. Team members must be enrolled at the same school. (No exceptions will be made).

6、团队成员必须在同一所学校注册。（不会例外）。

7. Team members must be undergraduate students postgraduate students are not allowed.

7、团队成员必须是本科生，研究生不被允许。

## II. AFTER THE CONTEST BEGINS:

### II.比赛开始之后:

#### A. View the contest problems via the contest web site:

##### A.通过比赛网站查看比赛问题:

Teams can view the contest problems via the contest web site **when the contest begins at 5PM EST on Thursday January 24, 2019:**

**2019 年 1 月 24 日星期四美国东部标准时间比赛开始时**，团队可以通过比赛网站查看比赛问题:

1. The contest problems will become available precisely at 5PM EST on Thursday January 24, 2019; team members can view them by visiting <http://www.comap.com/undergraduate/contests/mcm>. No password will be needed to view

the problems; simply go to the contest web site at or after 5PM EST on Thursday, January 24, 2019 and you will see a link to view the problems.

1、竞赛题会 2019 年 1 月 24 日星期四美国东部时间下午 5 点公布；团队成员可以访问 <http://www.comap.com/undergraduate/contests/mcm> 查看。不需要密码来查看问题；在 2019 年 1 月 24 日星期四下午 5 点之后到比赛网站，你会看到一个链接来查看问题。

2. The contest problems will become available precisely at 4:50PM EST on Thursday January 24, 2019 on the following mirror sites:

<http://www.comap-math.com/mcm/index.html>

<http://www.mathismore.net/mcm/index.html>

<http://www.mathportals.com/mcm/index.html>

<http://www.immchallenge.org/mcm/index.html>

2、比赛问题将于 2019 年 1 月 24 日星期四美国东部时间下午 4:50 在以下镜像站点上公布：

<http://www.comap-math.com/mcm/index.html>

<http://www.mathismore.net/mcm/index.html>

<http://www.mathportals.com/mcm/index.html>

<http://www.immchallenge.org/mcm/index.html>

If you cannot access any of the sites, there may be a problem with your local Internet connection. Contact your local Internet service provider to resolve the issue.

如果您无法访问任何网站，可能是您本地 Internet 连接的问题。请联系您当地的互联网服务提供商来解决问题。

## **B. Choose a problem:**

### **B.选择一个问题：**

Each team may choose any one of the six problem choices and should submit a solution to only one problem.

每个团队可以选择六个问题选择中的任何一个，并且应该只提出一个问题的解决方案。

- **MCM problems are Problem A, Problem B or Problem C.**
- **MCM 问题是问题 A，问题 B 和问题 C.**
- **ICM problems are Problem D, Problem E or Problem F.**

- **ICM 问题是问题 D，问题 E 和问题 F.**

### **C. Teams prepare solutions:**

#### **C.团队准备解决方案:**

1. Teams may use any inanimate source of data or materials: computers, software, references, web sites, books, etc. ALL SOURCES USED MUST BE CREDITED. Failure to credit a source will result in a team being disqualified from the competition.

1、团队可以使用任何数据或材料来源：计算机，软件，参考资料，网站，书籍等。所有使用的资料必须是可信的。不可信的数据来源将导致一个团队被取消参赛资格。

2. Team members may not seek help from or discuss the problem with their advisor or anyone else, except other members of the same team. Input in any form from anyone other than student team members is strictly forbidden. This includes email, telephone contact, and personal conversation, communication via web chat or other question-answer systems, or any other form of communication.

2、除了同一个团队的其他成员外，团队成员不可以向其指导教师或任何其他人员寻求帮助或讨论问题。任何讨论是严格禁止的。这包括电子邮件，电话联系和个人对话，通过网络聊天或其他问答系统进行通信，或任何其他形式的通信。

3. Partial solutions are acceptable. There is no passing or failing cut-off score, and numerical scores will not be assigned. The MCM/ICM contest judges are primarily interested in the team's approach and methods.

3、部分解决方案是可接受的。没有通过或失败的截止分数，数值分数将不被分配。MCM / ICM 比赛评委主要对团队的方法和过程感兴趣。

4. **Summary Sheet:** The summary is an essential part of your MCM/ICM paper. The judges place considerable weight on the summary, and winning papers are often distinguished from other papers based on the quality of the summary.

4、摘要：摘要是您的 MCM / ICM 论文的重要组成部分。阅卷专家评判在摘要上占有相当的份额，胜利论文通常根据摘要的质量与其他论文区分开来。

To write a good summary, imagine that a reader will choose whether to read the body of the paper based on your summary: Your concise presentation in the summary should inspire a reader to learn about the details of your work. Thus, a summary should clearly describe your approach to the problem and, most prominently, your most important conclusions.

Summaries that are mere restatements of the contest problem, or are a cut-and-paste boilerplate from the Introduction are generally considered to be weak.

要写出一个很好的摘要，想象一下读者会根据你的摘要来选择是否阅读论文的主体：你的简明扼要的展示应激励读者了解你的工作细节。因此，摘要应该清楚地描述你对这个问题的处理方式，最重要的是展示出你最重要的结论。仅仅是比较问题的重述，或者对简介各种剪切的摘要通常被认为是薄弱的。

**Besides the summary sheet as described each paper should contain the following sections:**

除了每篇论文所述的摘要表还应包含以下部分：

- **Restatement and clarification of the problem:** State in your own words what you are going to do.
  - **重述和澄清问题：** 用你自己的话说出你要做的事情。
- **Explain assumptions and rationale/justification:** Emphasize the assumptions that bear on the problem. Clearly list all variables used in your model.
  - **说明假设和理由：** 强调对问题的假设。清楚地列出模型中使用的所有变量。
- **Include your model design and justification** for type model used or developed.
  - **模型的设计与理由：** 建立/使用的模型。
  - **Describe model testing and sensitivity analysis**, including error analysis, etc.
  - **描述模型测试和敏感性分析，** 包括错误分析等。
  - **Discuss the strengths and weaknesses** of your model or approach.
  - **讨论您的模型或方法的优缺点。**

5. The judges will evaluate the quality of your writing in the Solution Paper:

5、阅卷专家将评估在解决您的论文写作质量：

- Conciseness and organization are extremely important.
- **简洁和组织是非常重要的。**
- Key statements should present major ideas and results.
- **主要陈述应提出重大思路 and 结果。**
- Present a clarification or restatement of the problem, as appropriate.
- **酌情澄清或重述问题。**
- Present a clear exposition of all variables, assumptions, and hypotheses.
- **对所有变量，假设和假设进行清晰的阐述。**

- Present an analysis of the problem, including the motivation or justification for the model that is used.

- 对问题进行分析，包括所使用模型的动机或理由。

- Include a design of the model.

- 模型的设计。

- Discuss how the model could be tested, including error analysis and stability (conditioning, sensitivity, etc.).

- 讨论如何测试模型，包括误差分析和稳定性（调理，敏感性等）。

- Discuss any apparent strengths or weaknesses in your model or approach.

- 讨论您的模型或方法中的任何明显的优点或缺点。

6. Papers must be typed in English, with a readable font of at least 12 point type.

6、论文必须用英文输入，字体大小至少为 12。

7. The solution must consist entirely of written text, and possibly figures, charts, or other written material only. No non-paper support materials such as computer files or software will be accepted.

7、解决方案必须完全由书面文本，可能包括图形，图表或其他书面材料组成。不接受电脑文件或软件等非纸质材料。

8. **The Solution Paper must display the team control number and the page number at the top of every page;** for example, use the following page header on each page:

Team # 321

Page 6 of 13

8、解决方案纸必须在每页顶部显示团队控制编号和页码；例如，在每个页面上使用以下页眉：

团队 # 321

第 6 页，共 13 页

9. The names of the students, advisor, or institution should NOT appear on any page of the electronic solution. The solution should not contain any identifying information other than the team control number.

9、学生，指导教师或所在学校的名称不应出现在电子解决方案的任何页面上。该解决方案不应包含除团队控制号之外的任何识别信息。

10. Failure to adhere to any preparation rule is grounds for team disqualification.

10、不遵守准备规则是团队取消资格的理由。

**D. Advisor Login: Choose a Problem and Print Control Sheet:****D.指导教师登录：选择问题并打印控制页：**

After the contest begins at 5PM EST on Thursday January 24, 2019, and while the teams are preparing their solutions, the advisor should

比赛于 2019 年 1 月 24 日星期四美国东部标准时间下午 5 点开始，而团队正在准备解决方案时，指导教师应：

1. Login to the contest web site (go to <http://www.comap.com/undergraduate/contests/mcm>. Click on **Advisor Login**, then enter your email address and password).

1、登录比赛网站（转到 <http://www.comap.com/undergraduate/contests/mcm>。点击 **Advisor Login**，然后输入您的电子邮件地址和密码）。

2. If you have not done so already enter the team member names and confirm that each name is spelled correctly. **This determines how the names will appear on the contest certificates. COMAP will not make any changes or reprint certificates for any reason.**

2、如果您尚未输入团队成员名称，并确认每个名称的拼写是否正确。这将决定名称将如何出现在比赛证书上。**COMAP** 不会因任何原因进行任何更改或转载证书。

3. Specify the problem that your team has chosen to solve.

3、指定您的团队选择解决的问题。

4. Print/Download one copy of the Control Sheet.

4、打印/下载控制页的一个副本。

5. Download or copy the team Summary Sheet. (This should be used as the first page of your electronic email submission.)

5、下载或复制小组摘要页。（这应该用作电子邮件提交的第一页。）

**III. BEFORE THE CONTEST ENDS:****III.在比赛结束之前：****A. Send electronic copy of Solution Paper by email:****A.通过电子邮件发送解决方案纸的电子副本：**

1. Each team is required to submit an electronic copy of its solution paper by email to [solutions@comap.com](mailto:solutions@comap.com). Any team member or the advisor may submit this email.

1、每个团队都必须通过电子邮件将其解决方案文件的电子副本提交至 [solutions@comap.com](mailto:solutions@comap.com)。任何团队成员或指导教师都可以提交到此电子邮件。

a. **Your email MUST be received at COMAP by the email submission deadline of 9PM EST on January 28, 2019.**

a.您的电子邮件必须在截止日期被 **COMAP** 接收。截止日期为 **2019 年 1 月 28 日美国东部标准时间下午 9 点**。

b. Failure by a team to submit a solution via email by **9PM EST on January 28, 2019** constitutes a violation of the contest rules and will result in that team's disqualification.

b.一个团队未能在 **2019 年 1 月 28 日美国东部标准时间下午 9 点** 通过电子邮件提交解决方案构成违反比赛规则，并导致该队取消资格。

c. No further modifications, enhancements, additions, or improvements may be made to the team's solution paper after 8PM EST on January 28, 2019. Any changes to the solution will constitute a violation of the contest rules and may result in disqualification.

c.在 **2019 年 1 月 28 日**，美国东部标准时间下午 8 点后，不得对团队的解决方案进行进一步的修改、增强、增加或改进。解决方案的任何更改将构成对比赛规则的违反，并可能导致取消资格。

2. In the subject line of your email write: your team's control number. For example:

Subject: **1900000**

2、在您电子邮件的主题行中，写入：您的团队的控制号码。例如：

主题： **1900000**

3. Use your team's control number as the name of your file attachments.

3、使用团队的控制号作为文件附件的名称。

4. COMAP will accept only a **Adobe PDF** of your solution. DO NOT include your Control Sheet, programs or software with your email as they will not be used in the judging process. Limit one solution per email. **The names of the students, advisor, or institution should NOT appear on any page of the electronic solution. Your team's summary should be included as the first page of your file. \*Note: The attachment must be less than 17MB.**

**!! Do not use a cloud service such as Google Docs your email must contain a Adobe PDF attachment.**

4、COMAP 将仅接受您的解决方案的 **Adobe PDF** 文件。不要在您的电子邮件中包含您的控制页，程序或软件，因为它们不会在评估过程中使用。每邮件限制一个解决方案 学生，指导老师或机构的名称不应出现在电子解决方案的任何页面上。您的团队摘要应该作为您的文件的第一页。

\*注意：附件必须小于 17MB。

**！！请勿使用 Google 文件等云服务，您的电子邮件必须包含 Adobe PDF 附件。**

5. See the rules for submitting the signed Control Sheet via email below.

5、请参阅下面通过电子邮件提交签名的控制页的规则。

#### **IV. WHEN THE CONTEST ENDS:**

#### **IV.当比赛结束时：**

##### **A. Prepare Control Sheet:**

##### **A.准备控制表：**

**When the contest ends at 8PM EST on January 28, 2019:**

比赛结束于 2019 年 1 月 28 日美国东部标准时间下午 8 点：

1. Each team member must sign the Control Sheet to pledge that he or she abided by the contest rules and instructions.

1、每个团队成员都必须签署控制页，以保证他或她遵守了比赛的规则和说明。

*\*Note you are not required to mail a print copy of your Solution Paper or Control Sheet.*

*\*请注意，您不需要邮寄解决方案纸或控制表的打印副本。*

##### **B. Email The Signed Control Sheet:**

##### **B.电子签名控制页：**

1. **Send the signed Control Sheet by email to COMAP:**

1、通过电子邮件将签名的控制表发送到 **COMAP**：

After the signed control sheet is prepared, email it to: [forms@comap.com](mailto:forms@comap.com). In the subject line of your email write: your team's control number. For example: **1900000**. COMAP will



accept only an Adobe PDF or a Photo Image of your control sheet. Limit one set of forms per email. Teams may take pictures of the signed forms with a phone or digital camera and then email the images to [forms@comap.com](mailto:forms@comap.com). \*Note: The attachment must be less than 17MB.

(Note you are not required to mail a print copy of your Control Sheet.) **!! Do not use a cloud service such as Google Docs your email must contain a Adobe PDF or Photo Images.**

在签名的控制页准备好后，将其发送到：[forms@comap.com](mailto:forms@comap.com)。在您电子邮件的主题行中写道：您的团队的控制号码。例如：**1900000**。COMAP 将仅接受您的控制页的 Adobe PDF 或照片图像。每封电子邮件限制一份控制页。团队可以用电话或数码相机拍摄签名的表格，然后将图像发送到 [forms@comap.com](mailto:forms@comap.com)。\*注意：附件必须小于 17MB。（注意，您不需要邮寄控制表的打印副本。）

**！！请勿使用 Google 文件等云服务，您的电子邮件必须包含 Adobe PDF 或照片图像。**

The Control Sheet must be received by COMAP no later than 5:00 PM EST on Friday, February 8, 2019.. COMAP is not responsible for contest forms received after that date.

控制表必须在 2019 年 2 月 8 日（星期五）之前的美国东部时间下午 5:00 之前由 COMAP 收到。对于在该日期之后收到的比赛表格，COMAP 概不负责。

## V. AFTER THE CONTEST IS OVER:

### V.比赛结束后:

#### A. Confirm that your team's solution was received:

##### A.确认您的团队解决方案已收到:

1. You may login to the contest web site using the **Advisor Login** link to verify that your team's Electronic Solution was received at COMAP.

1、您可以使用 **Advisor Login** 链接登录比赛网站，以验证您的团队的电子解决方案是否已在 COMAP 收到。

#### B. Check contest results:

##### B.检查比赛结果:

1. **Judging:** Judging will be completed in March and the results will be posted on April 29, 2018. The Solution Papers will be recognized as Disqualified, Unsuccessful, Successful Participant, Honorable Mention, Meritorious, Finalist, or Outstanding Winner.

1、**判断:** 评审将于 3 月份完成, 结果将于 2018 年 4 月 29 日公布。解决方案文件将被认定为取消资格, 不成功, 成功参与者, 荣誉奖, 优胜者, 入围者或优秀获奖者。

2. We will post the contest results on the web site as soon as they are available, so visit the contest web site regularly to check for updates. It will take several weeks for the judges to evaluate the solutions and for COMAP to process the results. Please do NOT call or email COMAP regarding contest results.

2、我们会尽快将比赛结果发布在网站上, 以便定期访问比赛网站以查看更新。阅卷专家需要几周的时间来评估解决方案, 并为 COMAP 处理结果。请不要打电话给 COMAP 或发送电子邮件查看比赛结果。

### C. Prizes/Certificates:

#### C. 奖品/证书:



**NEW COMAP** is expanding the Two Sigma Scholarship Award to an international award, the **NEW International COMAP Scholarship Award** will be awarded to the four(4) top MCM/ICM teams from any of the participating countries; \$9000 being split among the team members and \$1000 to the school represented. Awards will be announced on or before April 30th each year.



新国际 COMAP 奖学金将颁发给四位顶级 MCM / ICM 美国队; 每队 \$ 10,000, 团队成员 9000 美元, 学校代表 1000 美元。奖项将于每年的 3 月 30 日前公布。

After the results are issued, each successfully participating team advisor and student will receive a certificate of participation. You may login to the contest web site using the **Advisor Login** link to view and print your team's certificates. All international teams will

receive ONLY an electronic (PDF) certificate. US teams should allow several weeks after the results are posted to the contest web site to receive your print certificate. [Click here to download MCM/ICM certificates.](#)

- **MCM Awards (Problem A, B and C)**
- The Ben Fusaro Award will be accorded to an especially creative paper and will be chosen from the contest finalists.
- The Frank R. Giordano Award began in 2012. It honors Brig. Gen. (ret) Frank Giordano who directed the MCM for 20 years. This award goes to a paper that demonstrates true excellence in the execution of the modeling process.
- **ICM Awards (Problem D, E and F)**
- The Leonhard Euler Award is presented to a team selected by the head judge of the ICM's Problem D. The criteria are: 1) a paper in the Meritorious/Finalist/Outstanding rating; 2) contains especially creative and innovative modeling; and 3) shows good understanding of interdisciplinary science. The award honors the name of a 18th-century Swiss applied mathematician, who was known for the breadth of his research applications, volume of written work, excellent teaching, and interdisciplinarity.
- The Rachel Carson Award honors an American conservationist whose book "Silent Spring" initiated the global environmental movement and whose work spanned many disciplines concerned with the local and global environments. This award is presented to a team selected by the Head Judge of ICM Problem E for excellence in using scientific theory and data in its modeling.

Vilfredo Pareto was an Italian scholar, modeler and problem solver, who at various times was an engineer, sociologist, economist, political scientist, mathematician, and philosopher. He lived and worked in the late 19th and early 20th centuries. The ICM Pareto Award for outstanding modeling in the Policy Modeling problem (ICM Problem F) honors the work and legacy of this famous social science problem solver. In particular for this award, the head judge seeks to highlight a paper that best models the more dynamic and challenging contextual human elements that make simplification or refinement of policy models so difficult.



结果公布后，每个成功参与的团队顾问和学生将获得参加证书。您可以使用 **Advisor Login** 链接登录比赛网站，查看和打印团队的证书。所有国际团队只能获得电子（PDF）证书。美国队应该在比赛结果发布到比赛网站几周后收到您的打印证书。 [Click here to download MCM/ICM certificates.](#)

- **MCM 奖（问题 A, B 和 C）**
- **Ben Fusaro** 奖将被授予特别有创意的论文，并将从比赛决赛入围者中选出。
- **Frank R. Giordano** 奖于 2012 年开始。它荣誉 **Brig.Gen.(ret)Frank Giordano** 指导了 MCM 20 年。该奖项旨在表彰建模过程中执行方面的卓越表现。
- **ICM 奖（问题 D, E 和 F）**
- **Leonhard Euler** 奖被提交给由 ICM 问题 D 的首席阅卷专家选出的一个团队。标准是：1) 荣誉/决赛入围者/杰出评级的论文; 2) 特别创造性和创新性的建模; 和 3) 表现出对跨学科科学的良好理解。该奖项荣获 18 世纪瑞士应用数学家的称号，他以研究应用的广泛性，书面作品的数量，优秀的教学和跨学科性闻名。
- **Rachel Carson Award** 奖表彰了美国环保主义者——他们的书，“沉默之春”启动了全球环境运动，其工作跨越了许多涉及当地和全球环境的学科。该奖项颁发给由 ICM 问题 E 首席阅卷专家选定的一个团队，表彰其建模中使用科学理论和数据。
- **Vilfredo Pareto** 是意大利学者，建模者和问题解决者，他在不同时期担任工程师，社会学家，经济学家，政治学家，数学家和哲学家。他在 19 世纪末和 20 世纪初生活和工作。政策建模问题（ICM 问题 F）中优秀建模的 **ICM Pareto** 奖荣获了这位著名的社会科学问题解决者的工作和遗产。特别是对于这个奖项，首席阅卷专家力求突出强调一篇论文，最好地模拟更加动态和具有挑战性的语境人物因素，从而使政策模型的简化或改进变得困难。



The Institute for Operations Research and the Management Sciences (INFORMS) is the largest society in the world for professionals in the field of operations research (OR), management science (MS), and analytics. INFORMS has long recognized the importance of involving undergraduate students and faculty in an unscripted process of mathematical modeling whose problems contain many of the modern elements seen by its membership. The MCM/ICM exemplifies these characteristics. Consequently, INFORMS has been an active supporter of the MCM/ICM since its inception.

INFORMS carefully selects and designates a single Outstanding team from each of the six

problems - A, B, C, D, E, F - as an INFORMS Outstanding winning team whose modeling and analyses best exemplify the style and content reflected in its membership's professional practice. Each student receives a letter of congratulations from the current INFORMS President and a complimentary one-year INFORMS student membership. Each associated faculty advisor receives a letter of congratulations and appreciation from the current INFORMS President, along with complimentary one-year access to the full suite of award-winning INFORMS journals.



运营研究和管理科学研究所（INFORMS）是世界上运营研究（OR），管理科学（MS）和分析领域专业人士最大的社区。INFORMS 长期认识到本科生和教师参与数学建模过程的重要性，其问题包含其成员所看到的许多现代元素。MCM / ICM 体现了这些特征。因此，自成立以来，INFORMS 一直是 MCM / ICM 的积极支持者。

INFORMS 从六个问题--A, B, C, D, E, F 中的每一个中仔细选择并指定一个杰出的团队，作为 INFORMS 杰出的获奖团队，其建模和分析最能体现其会员专业实践中体现的风格和内容。每位学生收到当前 INFORMS 总裁的祝贺信和免费的一年 INFORMS 学生会员资格。每位相关的教师顾问都会收到当前 INFORMS 总裁的祝贺和赞赏信，以及免费为期一年的全套屡获殊荣的 INFORMS 期刊。



The Society for Industrial and Applied Mathematics (SIAM) will designate one Outstanding team from MCM Problems A and B as a SIAM winner. Each student member of the winning team will receive a cash award of \$500 and three one-year student memberships in SIAM. A certificate for the home institutions will be given to the faculty advisers of the winning teams.



工业和应用数学学会（SIAM）将指定一名来自 MCM 问题 A 和 B 的优秀团队作为 SIAM 获胜者。获奖队伍的每位学员都将获得 SIAM 现金 500 美元和 3 年制学员会员资格。向该机构颁发的证书将给予获奖团队的教师顾问。



The Mathematical Association of America (MAA) will designate two Outstanding teams from the MCM as MAA winners. Each student member of the winning team will receive a certificate. MAA will partial reimburse teams travel expenses to Math Fest so that they may present their paper.



美国数学协会（MAA）将指定来自 MCM 的两名优秀团队作为 MAA 获奖者。获奖团队的每名学员都将获得证书。MAA 将部分报销团队旅费到 Math Fest，以便他们可以提交他们的论文。



The American Statistical Association (ASA) will designate one Outstanding team from MCM Problem C as a ASA winner.



美国统计协会（ASA）将指定一名来自 MCM 问题 C 的优秀团队作为 ASA 获胜者。