

MCM/ICM 注册和报名指导手册，由公众号：数学建模比赛 翻译，为参赛老师和学生提供的帮助手册。

转载请注明来源：公众号：数学建模比赛

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

MCM®/ICM®

Contest Rules, Registration and Instructions

February 13-17, 2020

比赛规则，注册和说明

2020 年 2 月 13 日-17 日

(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。)

RECENT CHANGES TO THE MCM/ICM RULES ARE HIGHLIGHTED IN RED

最新对 MCM/ICM 规则的更改以红色突出显示

COMAP'S Mathematical Contest in Modeling (MCM®) / Interdisciplinary Contest in Modeling (ICM®) is an international contest designed to provide undergraduate students with the opportunity to work as team members to engage in and improve their modeling, problem solving, and writing skills. Teams apply mathematics to model, develop, and communicate a solution to a real-world problem.

COMAP 的数学建模竞赛（MCM）/交叉学科建模竞赛（ICM）是一项国际性竞赛，旨在为本科生提供作为团队成员参与和提高建模、解决问题和写作技能的机会。团队将数学应用于建模、开发和交流现实世界问题的论文。

MCM/ICM: Procedures and Tips for a Great Experience

MCM-ICM: 成功的实践过程和提示

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 from registration through solution submission, as well as tips to ensure your contest experience is smooth, successful, and enjoyable.

本文旨在帮助和指导学生和导师参加 MCM 和 ICM。在本文中，COMAP 提供了从注册到提交论文的全过程信息，以确保您的竞赛体验顺利、成功和愉快。

2020 Contest Dates and Times:

2020 年竞赛日期和时间

- Registration Deadline: Before 3:00 p.m. EST on Thursday, February 13, 2020.
- 注册截止时间：2020 年 2 月 13 日 下午 3 点（美国东部时间）（北京时间 2 月 14 日早上 4 点）
- Contest Starts: 5:00 p.m. EST on Thursday, February 13, 2020.
- 竞赛开始时间：2020 年 2 月 13 日 下午 5 点（美国东部时间）（北京时间 2 月 14 日早上 6 点）【公众号 数学建模比赛 会第一时间发布赛题及参考翻译】
- Contest Ends: 8:00 p.m. EST on Monday, February 17, 2020.
- 竞赛截止：2020 年 2 月 17 日 下午 8 点（美国东部时间）（北京时间 2 月 18 日早上 9 点）
- Solution Report Deadline: 9:00 p.m. EST on Monday, February 17, 2020.
- 论文提交截止时间：2020 年 2 月 17 日 下午 9 点（美国东部时间）（北京时间 2 月 18 日早上 10 点）
- Contest Results: The results will be posted on or before April 30, 2020.
- 竞赛结果：2020 年 4 月 30 日之前

PS：今年中国肺炎疫情影响，美赛提供了两个比赛时间段。

1、第一个依然是上面的比赛而时间，第二个时间段是北京时间：2020.03.06 06:00——2020.03.10 10:00

2、第一时间段是三道题目，第二时间段是三道题目，参赛队自己选择题目，然后在每个时间段要求的时间提交论文。赛前不需要做选择参赛时间段的操作！

MCM/ICM Rules, Registration, and Instructions

竞赛规则、注册和操作手册

I. Participants and Advisors （注册比赛）

II. MCM/ICM Resource Guide （资源简介）

III. Changes for 2020 （2020 年的变化）

IV. Contest Rules （竞赛规则）

V. Contest Registration （竞赛注册）

VI. Contest Instructions (竞赛简介)

- Before the Contest - Preparing a Team (比赛开始前, 注册队伍)
- During the Contest - Choosing and Solving the Problem (竞赛期间, 选题答题)
- During the Contest - Preparing a Solution Document (竞赛期间, 准备论文)
- During the Contest - Advisor Activities (竞赛期间: 指导教师的任务)
- After the Contest - Submitting a Solution Document (竞赛结束: 提交论文)
- After the Contest - Advisor Actions (竞赛结束: 指导教师的任务)

VII. MCM/ICM Results and Recognition (竞赛规则和评阅)

VIII. MCM/ICM Awards and Prizes (竞赛奖项)

IX. Judging Results and Designations (阅卷结果和获奖结果)

Notes:

- COMAP is in the USA Eastern time zone: all times given in these instructions are in terms of Eastern Standard Time (EST) except where local time is noted.
- COMAP is the final arbiter of all rules and policies, and may refuse to register, disqualify, or reduce the award level of any team that, in its sole discretion, does not follow contest rules, regulations, or requirements.
- Decisions of the judges, the contest directors, and the editor of The UMAP Journal are final.
- Please print a copy of these contest instructions for reference before, during, and after the contest. [Click here for the printer friendly version.](#)

注意事项:

- COMAP 比赛时间参照美国东部时区: 除注明当地时间外, 本说明中给出的所有时间均以东部标准时间 (EST) 为准。
- COMAP 是所有规则和政策的最终裁决者, 对于擅作主张, 不遵守竞赛规则、规则或要求的队伍, 组委会可以拒绝注册、取消资格或降低任何团队的获奖等级。
- 评委、竞赛负责人和 UMAP 杂志编辑的决定为最终决定。
- 请在比赛前、比赛中和比赛后打印一份比赛说明供参考。单击此处可以打印。

I. Participants and Advisors

Team Members: A team may consist of up to three students currently enrolled in the same school. Students may be enrolled in any department or program at the school. There is no limit to the number of teams a school may register. The contest is open to all undergraduate and high school students. An advisor must complete the registration process for each team.

1. 参赛者和指导老师

团队成员：一个团队最多可由三名目前在同一所学校注册的学生组成。参赛学生可以是学校的任何学院或项目中注册的学生。一所学校可以注册的队伍数量没有限制。比赛对所有的本科生和高中生开放。**指导老师**必须完成每个团队的注册过程。

Team Advisors: Any faculty, staff member, or student at the team's 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 encourage faculty members to serve as team advisors; however, one team member or another student at the school may act as the advisor.

团队指导老师：团队所属学校的任何教师或学生都可以履行指导老师的职责。指导老师将作为团队的主要联络人，不必来自数学系。我们鼓励教师担任团队指导老师；但是，学校的一名团队成员或另一名非团队学生也可以担任指导老师。

II. MCM/ICM Resource Guide

MCM-ICM: Procedures and Tips for a Great Experience

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, enjoyable, and successful.

II. MCM/ICM 资源指南

MCM-ICM：体验美好参赛过程的步骤和技巧

本文旨在帮助和指导学生和导师参加数学建模竞赛（MCM）和跨学科建模竞赛（ICM）。在这篇文章中，COMAP 提供了有关竞赛管理的信息，以及确保您的竞赛体验顺利、令人满意、愉快和成功的技巧。

III. Changes for 2020

- New! Follow @COMAPMath on Twitter or COMAPCHINAOFFICIAL on Weibo for the most up to date information.

- Registration process has been streamlined and split into 2 parts: Advisor Registration and Team Registration.
- Control Sheet is no longer required.

III. 2020 年比赛的变化

- 全新！关注 Twitter 上的@COMAPMath 或微博上的 COMAPCHINAOFFICIAL 获取最新信息。
- 注册流程已简化，分为两部分：指导老师注册和团队注册。
- 不再需要控制表。

IV. Contest Rules

1. The 2020 MCM/ICM contest period runs between 5:00 p.m. EST Thursday, February 13, 2020 and 8:00 p.m. EST on Monday, February 17, 2020.
2. Each team may consist of a maximum of three undergraduate (or below) students enrolled full- or part-time at the same school/institution at the time of the contest. Teams may consist of 1, 2, or 3 students and each student may only participate on one team.
3. Each team must have an advisor who is a staff member, a faculty member, or a student at the team members' institution. Advisors can serve more than one team. Advisors must register teams prior to 3p.m. EST on Thursday, February 13, 2020.
4. Teams must obtain and use the Control Number and password assigned to them at registration to participate in MCM/ICM.
5. Not later than the opening of the contest window, advisors must assign team members to a particular team, and cannot add or change student assignments for the duration of the contest. Teams may, however, remove a team member, if he or she decides not to participate.
6. Once the contest window opens (5:00 p.m. on Thursday, February 13, 2020), **team membership must be set and teams may not use any persons, other than their own team members, to discuss or obtain ideas for working on and solving their problem.** Teams may use any "inanimate" resource they find on their own such as: web pages, books, articles, research reports, databases, etc. Teams may not seek help in obtaining answers, ideas, or information, or in locating appropriate resources, from any persons outside of their team to include their advisor, other teachers, other students, and/or experts or professionals in a field relevant to the problem. This restriction includes personal or telephonic contact, as well as use of electronic social media such as, but not limited to: emails, texting, chat rooms, question-answer systems, interactive blogs, Twitter, Weibo, online help or support sites, etc. Additionally, posting or sharing any part or all of the problem statement, your team's solution process, or any partial or complete work in any form or medium during the contest is strictly prohibited. COMAP will disqualify or deem unsuccessful any team that

- violates this rule. The relevant issue is one of intent: each team of students is expected to develop all of its substantive analysis and solution without the help of others.
7. Teams must document any outside sources of information by using footnotes, endnotes, or in-line documentation, and include appropriate citations in a reference list or Bibliography of these sources.
 8. Teams choose to work on one problem (MCM: A, B, or C or ICM: D, E, or F) and submit one solution for the problem of their choice.
 9. The names of the students, advisor, and/or institution must not appear on any page of the solution. The solution must not contain any identifying information other than the team Control Number.
 10. Papers must be submitted as an Adobe PDF electronic file, and typed in English, with a readable font of at least 12-point type. Papers must be within the page limit specified in the problem statement.
 11. Upon closing of the contest window at 8:00 p.m. EST Monday, February 17, 2020, advisors must ensure each team makes no further changes to their solution paper. Advisors must then ensure all solution documents are properly prepared and sent via email to COMAP for judging no later than **9:00 p.m. EST Monday, February 17, 2020**.
 12. COMAP follows all accommodations relative to learning conditions for individual students used as part of the local school/institution program in an affected student's daily learning. If specialized staff is required, the school bears the responsibility for providing any specialized assistance as required by law. If such accommodations are required for a student participating, the school should detail them and the extent to which they were utilized as part of the MCM/ICM activities.
 13. COMAP reserves the right to disqualify or reduce the award level of teams found to have violated the contest rules.

IV. 竞赛规则

- 1、2020 MCM/ICM 竞赛时间为美国东部时间 2020 年 2 月 13 日星期四下午 5:00 至 2020 年 2 月 17 日星期一下午 8:00。
- 2、每一个参赛队最多可有三名本科生（或以下）在比赛时就读于同一学校或学院的全职或兼职学生。小组可由 1、2 或 3 名学生组成，每个学生只能参加一个团队。
- 3、每个团队必须有一名指导老师，该指导老师是团队成员学校的工作人员、教师或学生。指导老师可以为多个团队服务。指导老师必须在美国东部时间 2020 年 2 月 13 日星期四下午 3 点之前注册团队。
- 4、团队必须获得并使用注册时分配给他们的控制号码和密码才能参加 MCM/ICM。

5、指导老师必须在不迟于比赛开始之前，将队员分配给特定的队伍，并且不能在比赛期间添加或更改学生的信息。但是，如果团队成员决定不参加，则可以将其删除。

6、比赛开始后（2020 年 2 月 13 日，星期四下午 5:00），必须设置团队成员，团队不得和任何人（除了自己的团队成员）讨论或获取解决问题的想法。团队可以使用他们自己发现的任何“无生命”资源，例如：网页、书籍、文章、研究报告、数据库等。团队不得寻求帮助，从团队之外的任何人那里获得答案、想法或信息，或寻找适当的资源，包括他们的导师、其他教师、其他学生，和/或问题相关领域的专家或专业人员。此限制包括个人或电话联系，以及使用电子社交媒体，例如但不限于：电子邮件、短信、聊天室、问答系统、互动博客、Twitter、微博、在线帮助或支持网站等。此外，发布或共享问题陈述的任何部分或全部内容，参赛队伍的解决过程，或比赛中任何形式或媒介的部分或全部工作，都是严禁的。任何违反此规则的团队，COMAP 将取消其资格或视为不成功参赛。总而言之：每一个学生团队都应该在没有其他人帮助的情况下，进行实质性分析和研究论文。

7、团队必须使用脚注、尾注或在线文档记录任何外部信息的来源，并在这些来源的参考列表或书目中包含适当的引用。

8、团队选择解决一个问题（MCM:A、B、C 或 ICM:D、E 或 F），并为他们选择的问题提交一个论文。

9、学生、指导老师和/或学校机构的名称不得出现在论文的任何页面上。论文不能包含除团队控制号以外的任何标识信息。

10.论文必须以 Adobe PDF 电子文件的形式提交，并以英文打字，字体至少为 12 点可读。论文必须在问题陈述中指定的页数限制内。

11、当竞赛于美国东部时间 2020 年 2 月 17 日（星期一）晚上 8:00 结束时，指导老师必须确保每个团队对其论文文件不再做任何更改。指导老师必须确保所有论文文件均已妥善准备，并通过电子邮件发送至 COMAP，以便在美国东部时间 2020 年 2 月 17 日（星期一）晚上 9:00 之前组委会收到阅卷。

12、在受影响学生的日常学习中，COMAP 遵循作为当地学校/机构，计划一部分的个别学生学习条件相关的所有住宿。如果需要专业人员，学校有责任提供法律规定的专业帮助。如果学生需要此类住宿，学校应详细说明这些住宿，以及这些住宿在多大程度上被用作 MCM/ICM 活动的一部分。

13、对于违反竞赛规则的参赛队伍，COMAP 保留取消参赛资格或降低获奖等级的权利。

V. Contest Registration

The registration fee for MCM/ICM is \$100 per team. Please register only the teams that will take part in the contest. Registration fees are non-refundable. We accept payment via Credit Card, and payment must be made via our secure web site. 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. We regret that we are not able to accept other payment forms at this time.

All teams must be registered before 3:00 p.m. EST on Thursday, February 13, 2020. 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 2020 **under any circumstances. NO EXCEPTIONS WILL BE MADE.** *Note: Advisors do not have to designate specific team members when registering "a team." COMAP suggests you register the number of teams needed well prior to the deadline and then return to the contest site once team membership is set to enter specific students to each "Control Number" team you have registered.*

The new 2-part registration process will take advisors through a series of screens that ask for an email address and contact information. Enter the required information as you step through the screens. **Be sure to use a valid current email address** so that we can use it to contact you at any point before, during, or after the contest, if necessary.

V. 竞赛报名

MCM/ICM 的注册费为每队 100 美元。请只登记参加比赛的队伍。报名费不予退还。我们接受信用卡付款，付款必须通过我们的安全网站。我们的安全网站将处理您的信用卡付款，因此您的信用卡号码受到保护。我们的系统在处理您的付款后不会储存您的信用卡号码。很遗憾，我们现在不能接受其他付款方式。

所有团队必须在美国东部时间 2020 年 2 月 13 日星期四下午 3:00 前注册。我们建议所有团队提前完成注册过程，因为注册系统不会在截止日期后接受任何新的团队注册。在任何情况下，COMAP 都不会接受 MCM/ICM 2020 的延迟注册。不会有例外。注：在注册“一个团队”时，指导老师不必指定特定的团队成员。COMAP 建议您在截止日期前注册所需的团队数量。

2020 年分为两部分新的注册流程将引导指导老师通过一系列流程，要求提供电子邮件地址和联系信息。在逐步浏览屏幕时输入所需信息。请务必使用有效的当前电子邮件地址，以便我们可以在比赛前、比赛中或比赛后的任何时候（如有必要）使用它与您联系。

1. All Registration

Activity: <https://www.comap.com/undergraduate/contests/mcm>. COMAP will accept no other forms of registration. Advisors may register any number of teams, and should use the same email address and password for all teams under the same advisor.

2. **Advisor Registration:** If you are an advisor entering the contest site for the first time for the 2020 contest, click on [Register for Contest](#) on the left-hand side of the screen to register as an Advisor. Enter your email and click Continue Advisor Registration. Follow the step to continue and finish your registration. **IMPORTANT:** Be sure to use a valid and current email address as you will use this email to register all of your teams, and communicate with COMAP. Additionally, COMAP will use this email to contact you at any point before, during, and after the contest, if necessary.

3. **Register a Team or Teams:** On contest site, click on [Advisor Login](#), then log in with the same email address and password that you used when you registered as an advisor. Once you are logged in, click on **Register Team** near the upper right corner of the page and follow the instructions there. **There is no restriction on the number of teams an advisor can register.**

- a. Fill in billing information. After we receive approval from your financial institution (this takes only a few seconds), the system will issue a control number for your team.

- b. Each team is not officially registered until you have received a team **control number for that team**. The registration page also lists the email address and password that you entered when registering; you will need this information to complete the contest procedures. **Make a record of each team control number.** You will **NOT** receive an email confirmation of your registration.

- c. You may specify the team members at the time of registration, or at a later time. Advisors may assign team members to specific teams and control numbers up until the beginning of the contest period. Once the contest opens, team members cannot be added or changed. The spelling of all names and institutions is the responsibility of the advisor. This is exactly as they will appear on certificates. COMAP will not reprint certificates.

- d. To register additional teams, repeat the procedures listed above.

4. If you need to change any of the advisor or institution 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.

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 and Twitter/Weibo.
6. **New! Follow COMAPMath on Twitter or COMAPCHINAOFFICIAL on Weibo for the most up to date information before, during, and after the contest.**

1、所有注册活动的网址：

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

2、COMAP 不接受其他形式的注册。指导老师可以注册任意数量的团队，并且同一指导老师下的所有团队应该使用相同的电子邮件地址和密码。

3、指导老师注册：如果您是第一次作为 2020 年竞赛网站的指导老师，请单击屏幕左侧的“注册参加竞赛”以注册为指导老师。输入您的电子邮件并单击继续指导老师注册。按照步骤继续并完成注册。重要提示：请确保使用有效的当前电子邮件地址，因为您将使用此电子邮件注册所有团队，并与 COMAP 联络。此外，如有必要，COMAP 将在比赛之前、期间和之后的任何时候使用此电子邮件与您联系。

4、注册一个或多个团队：在竞赛网站上，单击“指导老师登录”，然后使用注册为指导老师时使用的相同电子邮件地址和密码登录。登录后，单击页面右上角附近的 **Register Team** 并按照那里的说明进行操作。指导老师可以注册的团队数量没有限制。

a、填写账单信息。在我们收到您的金融机构的批准后（这只需要几秒钟），系统将为您的团队发布一个控制号。

b、在您收到该团队的团队控制号之前，每个团队都不会正式注册。注册页面还列出了您在注册时输入的电子邮件地址和密码；您将需要此信息来

完成竞赛过程。记录每个团队控制编号。您将不会收到您注册的电子邮件确认。

c、您可以在注册时或以后指定团队成员。指导老师可以将团队成员分配给特定的团队，并在比赛开始前控制人数。比赛开始后，不能添加或更改团队成员。所有姓名和机构的拼写由指导老师负责。这与证书上显示的完全相同。COMAP 不会重印证书。

d、要注册其他团队，请重复上面列出的步骤。

4、如果您需要更改您注册时指定的任何指导老师或机构信息（姓名、地址、联系方式等），您可以在比赛之前或比赛期间的任何时候，使用与注册时相同的电子邮件地址和密码登录到比赛网站（单击屏幕左侧的 **Advisor** 登录链接）。登录后，单击页面右上角附近的编辑指导老师或机构数据链接。

5、定期查看比赛网站，了解有关比赛的最新说明或公告。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。所有与比赛有关的交流将通过比赛网站和 **Twitter/微博** 进行。

6、新的！关注 **Twitter** 上的 **COMAPMath** 或微博上的 **COMAPCHINAOFFICIAL**，了解赛前、赛中和赛后的最新信息。

VI. Contest Instructions

Before the Contest - Preparing a Team

1. We encourage advisors and faculty to coach and prepare students **BEFORE** the start of the contest. COMAP offers several resources:
 - a. Go to the MCM/ICM web site and review the rules, guidelines, and prior years' problems.
 - b. Visit www.mathmodels.org to view previous years' problems and solutions.
 - c. Visit <https://www.comap.com/undergraduate/contests/resources/index.html>, the MCM/ICM Articles, Resources, and Links page.
 - d. The MCM/ICM "Tips" article (found on the resource web page) provides students and advisors tips for before, during, and after the contest.
 - e. Read the Summer and Fall UMAP Journal MCM and ICM articles, which include the Director's Article and Judges' Commentary for MCM and ICM. These articles describe what judges look for in the various sections of solutions.
2. Ensure that students have access to computers that enable them to word process, use a spreadsheet, and dynamically model both graphs and geometric relationships.

VI. 竞赛指导

比赛前-准备队伍

1. 我们鼓励指导老师在比赛开始前指导学生。COMAP 提供了几种资源：

a、访问 MCM/ICM 网站，查看规则、指南和往年的问题。

b、访问 www.mathmodels.org 查看往年的问题和论文。

c、访问

<https://www.comap.com/undergraduate/contests/resources/index.html>,

MCM/ICM 文章、资源和链接页面。

d、MCM/ICM “提示” 文章（可在参考资料网页上找到）为学生和指导老师提供比赛前、比赛中和比赛后的提示。

e、阅读 UMAP 杂志的夏季和秋季 MCM 和 ICM 文章，其中包括文章和评委对 MCM 和 ICM 的评论。这些文章描述了评委在论文的各个部分中寻找的内容。

2、确保学生能够使用计算机进行文字处理、使用电子表格以及动态建模图形和几何关系。

During the Contest - Choosing and Solving the Problem

1. The contest problems become available for teams to view at precisely 5:00 p.m. EST on Thursday February 13, 2020 on the contest web site:

<https://www.comap.com/undergraduate/contests/mcm>

No password is needed to view the problems. Simply go to the contest web site at or after 5 p.m. EST on Thursday, February 13, 2020 and you will see a link to view the problems.

2. The contest problems will also become available for teams to view precisely at 4:50PM EST on Thursday February 13, 2020 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>

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.

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

- MCM problems are Problem A, Problem B or Problem C.

- ICM problems are Problem D, Problem E or Problem F.

4. Teams may use any inanimate source of data, materials, computers, software, references, websites, books, etc. Teams should reference all sources used using footnotes, endnotes, or in-line documentation, and include an associated reference list citing all sources.
5. Teams may not seek help from any person outside of team members as delineated in the Contest Rules (specifically Rule #6).
6. Teams should keep in mind the following guidelines when solving the problem and developing their solution.

a. **Summary Sheet:** The summary is an essential part of your MCM/ICM paper and should appear as the first page of your solution report. The judges place considerable weight on the summary, and winning papers are often distinguished from other papers based on the quality of the summary. [Click here to download the Microsoft Word Summary Sheet.](#)

- 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.

- You should write the summary last, as it should clearly describe your approach to the problem and, most prominently, your most important conclusions. Ensure you plan time after solving your problem to write a comprehensive and articulate summary.

- 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.

b. **Overall:** The team's solution should be articulate, concise, and organized in order to allow the reader to easily follow the solution process and conclusions. Key statements should present major ideas and results.

- A Table of Contents assists the reader in previewing the organization of your report.
- Present a clarification or restatement of the problem as appropriate.
- Present a clear exposition of all variables and hypotheses.
- State and justify reasonable assumptions that bear on the problem.
- Present an analysis of the problem, motivating or justifying the model being used.
- Summarize derivations, computations, or illustrative examples in the main body of the solution, and leave lengthy derivations and/or calculations and data in appropriate appendices.
- Include a design of the model. Discuss how the model could be tested, to include error analysis, sensitivity, and/or stability.
 - Discuss any apparent strengths or weaknesses to your model or approach.
 - Provide a conclusion and report results explicitly.
 - Document resources and references.

7. **New! Follow COMAPMath on Twitter or COMAPCHINAOFFICIAL on Weibo for the most up to date information before, during, and after the contest.**

在比赛中-选择和解决问题

1、竞赛问题将于美国东部时间 2020 年 2 月 13 日（星期四）下午 5:00，在竞赛网站上供参赛队查看：

<https://www.comap.com/undergraduate/contests/mcm>

查看问题不需要密码。只需在美国东部时间 2020 年 2 月 13 日（星期四）下午 5 点或之后访问竞赛网站，您就会看到一个链接来查看问题。

2、竞赛问题也将提供给团队，以便在美国东部时间 2020 年 2 月 13 日（星期四）下午 4:50 准确查看以下镜像站点：

<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>

如果无法访问任何站点，则可能是本地网络连接有问题。请与本地网络服务提供商联系以解决此问题。

3、每个注册团队可以选择六个问题中的任何一个，并且只应提交一个问题的论文。

- MCM 问题是问题 A、问题 B 或问题 C。

- ICM 问题是问题 D、问题 E 或问题 F。

4、团队可使用任何无生命的数据、材料、计算机、软件、参考资料、网站、书籍等来源。团队应使用脚注、尾注或联机文档引用使用的所有来源，并包括引用所有来源的相关参考列表。

5、参赛队不得向竞赛规则（特别是规则 6）所述参赛队成员以外的任何人寻求帮助。

6、团队在解决问题和制定论文时应牢记以下准则。

- a、摘要表：摘要是 MCM/ICM 文件的重要组成部分，应显示为论文报告的第一页。评委们对总结很重视，根据总结的质量，获奖论文往往与其他论文有所区别。单击此处下载 Microsoft Word 摘要工作表。

- 要写一篇好的摘要，想象一下读者会根据你的摘要来选择是否阅读论文正文：你在摘要中的简洁陈述应该会激励读者了解你工作的细节。

- 你应该把总结写在最后，因为它应该清楚地描述你解决问题的方法，最重要的是，你最重要的结论。确保你在解决问题后计划好时间，写一个全面而清晰的总结。

- 仅仅是对竞赛问题的重述，或是复制粘贴模板的摘要通常被认为是薄弱的。

b、总的来说：团队的论文应该清晰、简洁和有组织，以便读者能够轻松地遵循论文过程和结论。关键发言应提出主要意见和结果。

- 目录有助于读者预览报告的组织结构。
- 酌情对问题作出澄清或重述。
- 明确阐述所有变量和假设。
- 陈述并证明与问题有关的合理假设。
- 对问题进行分析，激励或证明所用模型的合理性。
- 总结论文主体中的推导、计算或说明性示例，并在适当的附录中留下冗长的推导和/或计算和数据。
- 包括模型设计。讨论如何测试模型，包括误差分析、灵敏度和/或稳定性。
- 讨论你的模型或方法的任何明显的优点或缺点。
- 提供结论并明确报告结果。
- 文件资源和参考文献。

7、新的！关注 Twitter 上的 COMAPMath 或微博上的 COMAPCHINAOFFICIAL，了解赛前、赛中和赛后的最新信息。

During the Contest – Preparing a Solution Document

1. MCM/ICM solutions are judged as varying degrees of successfully completing the contest (from Successful Participant up to Outstanding). There is no passing or cut-off score, and therefore, partial solutions are acceptable and teams are encouraged to complete as much of the problem as they are able to do. MCM/ICM judges are primarily interested in the team's thought processes, analysis of the problem, modeling approaches, and mathematical methods.

2. Teams must submit their entire solution in one **Adobe PDF** electronic file, consisting of written text, figures, charts, and supporting materials. Papers must be typed in English, with a readable font of at least 12-point type. Do not send additional “non solution” files such as data or computer programs.
3. Each page of the solution must contain the team control number and the page number at the top of the page. Use a page header on each page - for example: **Team # 204321, Page 6 of 13**.
4. Your solution report should start with the Summary Sheet followed by the team’s solution. Ensure your solution meets the page limit requirements as stated in the problem. A Table of Contents is encouraged and does not count toward the page limit. Reference list (or Bibliography), notes pages, and any appendices do not count in the page limit and should be included after the solution pages.
5. Names of the students, advisor, and/or institution **must not** appear on any page of the solution. The solution file **must not** contain any identifying information other than the team Control Number.
6. STOP making any changes to the solution at **8:00pm EST on Monday, February 17, 2020**.

比赛期间-准备论文文档

1、MCM/ICM 论文被视为不同程度的成功完成竞赛（从成功参与者到特等奖）。没有通过或及格分数，因此，部分论文是可以接受的，鼓励团队尽可能多地完成问题。MCM/ICM 评委主要对团队的思维过程、问题分析、建模方法和数学方法感兴趣。

2、团队必须在一个 **Adobe PDF** 电子文件中提交他们的整个论文，该文件由书面文本、图表和支持材料组成。论文必须用英文打字，字体至少为 12 号。不要发送其他“非论文”文件，如数据或计算机程序。

3、论文的每一页都必须包含团队控制号和页面顶部的页码。在每页上使用页眉-例如：**Team # 204321, Page 6 of 13**。

4、你的论文报告应该从摘要页开始，然后是团队的论文。确保您的论文满足问题中所述的页面限制要求。鼓励使用目录，不计入页数限制。参考列表（或参考书目）、注释页和任何附录不在页数限制内，应包含在论文页之后。

5、学生、指导老师和/或机构的名称不得出现在论文的任何页面上。论文不能包含除团队控制号以外的任何标识信息。

6、在美国东部时间 2020 年 2 月 17 日（星期一）晚上 8:00 停止对论文进行任何更改。

During the Contest – Advisor Activities

1. After the contest begins at 5 p.m. EST on Thursday February 13, 2020, and while the teams are preparing their solutions, the advisor should login to the contest web site at <https://www.comap.com/undergraduate/contests/mcm>. Click on **Advisor Login**, and then enter your email address and password.
2. For each control number, 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.**
3. Specify the problem that each team has chosen to solve.
4. [Click here to download a copy of the team Summary Sheet](#). (This should be used as the first page of each team's electronic email submission.)

比赛期间-指导老师任务

- 1、比赛于美国东部时间 2020 年 2 月 13 日（星期四）下午 5 点开始后，在各参赛队准备论文时，指导老师应登录比赛网站 <https://www.comap.com/undergraduate/contests/mcm>。单击 Advisor 登录，然后输入您的电子邮件地址和密码。
- 2、对于每个控制编号，如果您尚未输入，请输入团队成员名称并确认每个名称拼写正确。这将确定名称在竞赛证书上的显示方式。COMAP 不会以任何理由更改或重印证书。
- 3、指定每个团队选择要解决的问题。
- 4、单击此处下载团队摘要表的副本。（这应该作为每个团队提交电子邮件的第一页。）

After the Contest - Submitting a Solution Document

1. Teams must end all work on their solution by **8:00 p.m. EST on Monday February 17, 2020** and send an **Adobe PDF** electronic file of Solution Paper by email to COMAP by **9:00 p.m. EST on Monday, February 17, 2020**. **Note: Do not wait until the last minute. Send solution as soon as it is completed.*

2. No further modifications, enhancements, additions, or improvements may be made to the team's solution paper after 8 p.m. EST on February 17, 2020. Any changes to the solution will constitute a violation of the contest rules and may result in disqualification.
3. Each team is required to submit an Adobe PDF electronic copy of its solution by email to solutions@comap.com. Any team member or the advisor may submit this email.
 - a. Your email with your electronic PDF solution file **MUST** be received at COMAP on or before the email submission deadline of **9:00 p.m. EST on February 17, 2020**.
 - b. In the subject line of your email write your team's control number. For example, **Subject: 2012345**. Limit one team solution file per email.
 - c. Use your team's control number as the name of your file attachment. For example: **2012345.pdf**. **Note: The attachment must be less than 17MB. Do not use a cloud service such as Google Docs. Your email must contain an Adobe PDF attachment.*
 - d. Page 1 of the team's PDF electronic solution should be the team summary, followed by the solution and any references and appendices.
 - e. Do not include or send programs, software, databases, and/or other files with your solution email, as they will not be used in the judging process.
 - f. **The names of the students, advisor, or institution should NOT appear on any page of the electronic solution.**
 - g. COMAP will accept only an **Adobe PDF** of your solution. Limit one solution per email.
4. Failure by a team to submit a solution via email by **9:00 p.m. EST on February 17, 2020** in accordance with the above instructions may result in disqualification or reduction of award level.

比赛后-提交论文

- 1、各团队必须在美国东部时间 2020 年 2 月 17 日（星期一）晚上 8:00 之前结束论文的所有工作，并在美国东部时间 2020 年 2 月 17 日（星期一）晚上 9:00 之前，通过电子邮件向 COMAP 发送论文文件的 Adobe PDF 电子文件。**注意：不要等到最后一分钟。完成后立即发送论文。*
- 2、在美国东部时间 2020 年 2 月 17 日晚上 8 点之后，不得对团队的论文文件进行进一步的修改、增强、添加或改进。对论文的任何更改都将构成对竞赛规则的违反，并可能导致取消资格。
- 3、每个团队必须通过电子邮件向 solutions@comap.com 提交其论文的 Adobe PDF 电子副本。任何团队成员或指导老师都可以提交此电子邮件。

- a、 您的电子邮件和您的电子 PDF 论文文件必须在美国东部时间 2020 年 2 月 17 日晚上 9:00 的电子邮件提交截止日期当天或之前在 COMAP 收到。
 - b、 在电子邮件的主题行中写下团队的控制编号。例如，主题：2012345。每个电子邮件限制一个团队论文文件。
 - c、 使用团队的控制号作为文件附件的名称。例如：2012345.pdf。*注意：附件必须小于 17MB。不要使用像 Google Docs 这样的云服务。您的电子邮件必须包含 Adobe PDF 附件。
 - d、 团队 PDF 电子论文的第 1 页应该是摘要页，然后是论文以及任何参考和附录。
 - e、 不要在您的论文电子邮件中包含或发送程序、软件、数据库和/或其他文件，因为它们不会在评阅过程中使用。
 - f、 学生、指导老师或机构的名称不应出现在电子论文的任何页面上。
 - g、 COMAP 只接受您的论文的 Adobe PDF。每封电子邮件限制一个论文。
- 4、 如果团队未能按照上述指示在美国东部时间 2020 年 2 月 17 日晚上 9:00 之前通过电子邮件提交论文，则可能导致取消资格或降低获奖等级。

NOTE: By submitting a MCM/ICM contest entry document, team members agree that:

- Their submission and all rights to its publication become the property of COMAP, Inc.
- 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 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.
- All images, figures, photographs, tables, and drawings in a team's submission were either created by the team, or, if reproduced or obtained from another source, the submission cites a specific reference for each at its location in the submission.
- 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.

注：通过提交 MCM/ICM 竞赛参赛文件，参赛队员同意：

- 它们的提交及其出版的所有权利将归 COMAP, Inc.所有。
- COMAP 可以使用、编辑、摘录和发布此提交文件，以用于推广用途或任何其他目的，包括在线发布、电子分发、或在 UMAP 期刊上发布或以其他方式发布，无需任何补偿。
- COMAP 保留在与本次比赛有关的材料中使用团队成员、他们的指导老师及其附属机构的名称的权利，无需进一步通知、许可或赔偿。
- 一个小组提交的材料中的所有图像、图形、照片、表格和图纸要么是由小组创建的，要么是从另一个来源复制或获得的，提交材料在提交材料中的每个位置都引用了具体的参考。
- 提交文件中的所有引用均附有引号或以其他方式标明，并在提交文件中各引用一个具体参考文献。

After the Contest – Advisor Actions

1. Advisors should use the [Advisor Login](#) link one to two days after the contest has closed to verify COMAP received your team's electronic solution. In most cases, COMAP will have solution status of all papers posted 24-48 hours after the contest window ends.
2. Look for contest results in late April 2020. Visit the contest web site regularly and follow COMAP on @COMAPMath on Twitter or COMAPCHINAOFFICIAL on Weibo for updates. COMAP will post the contest results on the web site as soon as they are available. It takes 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.

赛后-指导老师任务

- 1、指导老师应在比赛结束后一到两天使用指导老师登录链接，以验证 COMAP 收到了您团队的电子论文。在大多数情况下，COMAP 将在比赛窗口结束后 24-48 小时内发布所有论文的论文状态。
- 2、查询 2020 年 4 月下旬的比赛结果。定期访问竞赛网站，在 Twitter 上的@COMAPMath 或微博上的 COMAPCHINAOFFICIAL 上关注

COMAP 以获取更新。一旦比赛结果出来, COMAP 就会在网站上公布。评委需要几周时间来评估论文, 而 COMAP 则需要几周时间来处理结果。请不要就比赛结果致电或发电子邮件给 COMAP。

VII. MCM/ICM Results and Recognition

1. Judging will be completed in March and the results will be posted on or before April 30, 2020. Levels of awards for successful submissions are Successful Participant, Honorable Mention, Meritorious, Finalist, or Outstanding Winner. Submission found to have rule or procedure violations, or problem solution issues may be designated as Disqualified or Unsuccessful. [Click here to view descriptions of the contest designations.](#)
2. COMAP will prepare news releases for local and national dissemination, and professional publications will announce results.
3. Every team that successfully submits a solution paper will be awarded a certificate of participation. All international teams will receive 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.](#)
4. Select teams will have all or portions of their solution papers published in COMAP's UMAP Journal.

VII. MCM/ICM 比赛结果

- 1、评审将于 3 月完成, 并于 2020 年 4 月 30 日或之前公布结果。成功提交的奖项级别包括成功参与者、二等奖、一等奖、特等奖提名、特等奖。如果提交的文件违反了规则或程序, 或发现问题解决问题, 则可能被指定为不合格或不成功参赛。单击此处查看比赛名称的说明。
- 2、COMAP 将为本地和全国的传播准备新闻稿, 专业出版物将公布结果。
- 3、每个成功提交论文文件的团队将获得参与证书。所有国际团队将收到一份电子 (PDF) 证书。美国队应该在比赛结果发布到比赛网站后的几周内收到你的打印证书。单击此处下载 MCM/ICM 证书。
- 4、选定团队的全部或部分论文将发表在 COMAP 的 UMAP 期刊上。

VIII. MCM/ICM Awards and Prizes



The 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.

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.

- **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。每位相关的教师指导老师都会收到当前 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指导老师。



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 partially 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。



The American Mathematical Society (AMS) will designate one Outstanding team from MCM Problems A, B and C as a AMS winners. Each student member of the winning team will receive a certificate.

美国数学学会（AMS）将从 MCM 问题 A、B 和 C 中选出一支优秀的队伍作为 AMS 的优胜者。获胜队的每个学生成员都将获得证书。

IX. Judging Results and Designations

What are the differences between the designations?

Disqualified - The team's report was found to be in violation of the contest rules.

Disqualified – Plagiarism: The solution paper had undocumented sources, verbatim text, or information lifted from the Internet, and/or was very similar to other papers submitted as determined by judges and/or our pairwise comparison software. All information, ideas, data, algorithms, etc. from outside sources used by team members must have the original source documented and properly referenced. Our pairwise comparison software identifies papers and/or parts of papers as similar to, or exactly the same as, other papers submitted.

Disqualified – Web: COMAP identified the solution paper, or portions of the solution paper as shared or posted, or a team member (or members) were found to have received assistance through interactive web sites or electronic media. Posting or sharing all, or any part of the problem statement, your solution, or partial solution anywhere during the contest weekend is strictly prohibited. Obtaining all, or any part, of anyone else's

solution is also prohibited. Contest rules prohibit seeking assistance outside of team members or obtaining help from human sources—in person or via any medium. COMAP continually monitors the Internet during the contest period.

九、 比赛判定结果及命名

名称之间有什么区别？

不合格-该队的报告被发现违反了比赛规则。

不合格-剽窃：论文文件有未记录的来源、逐字记录的文本或从互联网上提取的信息，和/或与法官和/或我们的配对比较软件确定的其他提交的文件非常相似。团队成员使用的来自外部来源的所有信息、想法、数据、算法等必须有原始来源的文档记录和适当引用。我们的成对比较软件将论文和/或部分论文识别为与提交的其他论文相似或完全相同。

不合格 - 网络：COMAP 将论文文件或部分论文文件确定为共享或发布，或发现团队成员（或成员）通过互动网站或电子媒体获得帮助。比赛周末期间，严禁在任何地方张贴或分享问题陈述、你的论文或部分论文的全部或任何部分。也禁止获取任何人的全部或部分论文。竞赛规则禁止在团队成员之外寻求帮助或从人身或通过任何媒介获得帮助。在比赛期间，COMAP 持续监控互联网。

Unsuccessful Participant - The team's report did not adequately respond to the requirements of the contest problem or a team (or team member) was found to have visited Internet sites discussing the contest problem during the contest period.

Unsuccessful Participant – Web: A team member (or members) visited websites or social media where contest problems were being openly discussed. Contest rules prohibit seeking assistance outside of team members or obtaining help from human sources—in person or via any medium. COMAP is continually monitoring the Internet during the contest period to include websites and social media where contest solutions are being openly discussed.

Unsuccessful Participant – Incomplete: The solution paper was found to be significantly incomplete and did not show any serious effort in adequately responding to the contest problem or its requirements.

未成功的参与者-团队的报告没有充分响应竞赛问题的要求，或者发现团队（或团队成员）在竞赛期间访问了讨论竞赛问题的网站。

不成功参与者-网络：团队成员（或成员）访问了公开讨论竞赛问题的网站或社交媒体。竞赛规则禁止在团队成员之外寻求帮助或从人身或通过任何媒介获得帮助。在比赛期间，COMAP 持续监控互联网，包括公开讨论比赛论文的网站和社交媒体。

不成功的参与者-不完整：论文文件被发现明显不完整，没有显示出任何认真的努力来充分响应竞赛问题或其要求。

Successful Participant - The team made a concerted effort to respond to the contest problem and submit a solution report. The report, however, had incomplete responses to all or some requirements, and/or showed some deficiencies or weakness in the modeling processes, analysis, conclusions, and/or communication.

成功的参与者-团队齐心协力应对竞赛问题并提交论文报告。然而，该报告对所有或某些需求的响应不完整，和/或在建模过程、分析、结论和/或沟通方面显示出一些缺陷或弱点。

Honorable Mention - The team's solution report indicated an above average effort in addressing all problem requirements, and contained elements that were judged to show sound and supported processes in modeling and problem solving, analysis, conclusions, and communication of results.

二等奖：该团队的论文报告表明，在解决所有问题需求方面的努力高于平均水平，并包含了一些元素，这些元素被认为在建模和问题解决、分析、结论和结果沟通方面显示了良好的支持流程。

Meritorious - The team's solution report was excellent in many aspects of modeling and problem solving, analysis, conclusions, and communication. The report addressed all requirements in a clear, well-supported, well-organized, and

well-presented manner.

一等奖：团队的论文报告在建模和问题解决、分析、结论和沟通等许多方面都非常出色。该报告以明确、得到充分支持、组织良好和表述良好的方式处理了所有要求。

Finalist - The designation Finalist recognizes teams whose solution reports are exemplary and therefore reached the final round of judging. These papers present complete and logical analysis in an organized and clear presentation above and beyond simply addressing the requirements. These papers are easy to read, easy to follow, logical, and comprehensive. Finalist papers are among the best of all team submissions.

特等奖提名：指定入围者认可其论文报告具有示范性的团队，因此进入最后一轮评审。这些文件以一种有组织的、清晰的方式呈现了完整的、逻辑的分析，而不仅仅是满足需求。这些论文易读，易懂，逻辑性强，内容全面。入围论文是所有参赛作品中最好的。

Outstanding Winner - The designation Outstanding recognizes teams whose solution reports are determined, in the final round of judging, to be the “best of the best.” These teams’ reports are at the highest level relative to the contest submissions in terms of exemplary student work in modeling and problem solving, analysis, and communication. COMAP may publish and use all or part of these submissions as examples of outstanding student work.

特等奖：他认为优秀的团队的论文报告在最后一轮评审中被确定为“最佳中的最佳”。这些团队的报告在建模和解决问题、分析和交流方面的模范学生工作方面处于与竞赛提交文件相关的最高水平。COMAP 可以出版并使用这些提交的全部或部分内容作为优秀学生作品的范例。