Scholar 231

Chapter 231

Once he was inside, he threw his jacket and car keys on the sofa. First, he went to the kitchen and made himself some coffee. He then sat down at his desk and was ready to continue working.

Suddenly, a message from Xiao Ai popped up on his phone screen.

[Master, new mail!]

Is it from Professor Frank?

Lu Zhou opened his computer and logged into his email. He did not just see one, but two emails in his inbox.

One email was sent three days ago, probably when he was still locked in his room. He probably did not see Xiao Ai's notification.

Lu Zhou did not recognize the sender's email address. Since he was afraid that he missed something important, he opened this one first.

[Mr. Lu Zhou, I am Vera Pulyuy from Berkeley. I have some questions from our last discussion. Don't know if I can take up some of your precious time?]

Pulyuy?

Probably a Slav name?

Why is this girl so polite? It's not like I'm some famous professor.

Lu Zhou scratched his head. He could not imagine this little girl being from a country with bearded large men and polar bears.

Never would've thought she is a Slav…

Lu Zhou shook his head and put these insignificant things aside. He skipped the paragraph worshiping him and looked at the important part of the email.

[… In the paper reported by Professor Helfgott at the mid-year conference of the Federal Mathematical Society, the third page of the 11-line formula J(n)=∫Φ(λ)·G(λ)2·H(λ) ·e|-nλ|dλ. Why does it directly draw the conclusions in the thesis proposition (2.1)?

Lu Zhou lifted his eyebrows.

Oh, she knows what she's talking about.

No wonder she's an IMO gold medalist, she's quite talented.

Compared to the question she asked me last time, this question was at least related to the circle method.

Lu Zhou smiled and typed a response.

[Because we have to deal with the interval using the circle method and establish several equal distribution results. So we record S1(q,α)=∑e(αm3/q), C1(q,α)=∑e(αm3/q2), brought into Td(n,q)=∑S1(q,αd3) ·|C1(q,αd3)|·e(-an/q)/qψ2(q)… and then, what do we get? Think about it yourself.]

Lu Zhou double checked his email and once he made sure there were no mistakes, he sent it out.

In the email, he did not directly answer Vera. He hoped that she could figure it out on her own.

If she wanted to study mathematics in the future, whether it was number theory or another field, this process of figuring it out on her own was crucial.

Basic mathematics could be taught, but higher levels of mathematics must be digested by herself. This was because everyone had different interpretations, so there was no standard answer.

Lu Zhou took a sip of his bitter coffee before he realized that he forgot to add sugar.

He walked to his kitchen and got some sugar. When he returned to his desk, he found out that he already received a reply.

“That quick?”

Lu Zhou placed down the coffee and opened the email.

The body had only one line.

[… can you get the order $\delta d(n)=\sum Td(n,q)$ absolute convergence?]

Lu Zhou smirked as he nodded with satisfaction.

This girl is worthy to be taught!

As he estimated, this student had potential.

Although her experience was low, her ability to understand and intuition toward numbers was high.

If he was a professor at Berkeley, he definitely would not mind being her supervisor.

Lu Zhou smiled and wrote a reply.

[Correct.]

Within a minute, he received a reply.

[Thank you.]

Wow, she's very polite as well.

Lu Zhou closed the email and looked at the calculations he did on the computer. He was about to delete this document when he suddenly stared at the lines of calculations. He then went into deep thought.

$Td(n,q)=\sum S1(q,\alpha d3)\cdot|C1(q,\alpha d3)|\cdot e(-an/q)/q\psi 2(q)\ldots$

The series $\delta d(n)=\sum Td(n,q)$ is absolutely convergent…

From here on, I can introduce the circle method and solve the proposition (2.1).

Lu Zhou suddenly realized something. He quickly opened his computer files and found Helfgott's thesis that was submitted to the Federal Mathematics Society's conference. He found the third line on page 11 and started to read.

The clock on the wall slowly ticked. Without him knowing, it had been half an hour.

Suddenly, Lu Zhou realized something. He quickly picked up a pen and started writing on paper.

Helfgott was undoubtedly the master of the circle method, just like how Chen Jingrun was the master of the sieve theory.

However, even Helfgott himself did not expect that the circle method could be used to solve Goldbach's conjecture. Lu Zhou had not expected himself to defeat the master while he was looking for a possible way.

However, when he was reviewing the thesis, he found a detail that he did not notice before.

The old man's thesis was very long, and thus, Lu Zhou did not examine it carefully. If it was not for Vera, Lu Zhou would not have noticed this detail.

Lu Zhou was ecstatic at this unexpected surprise.

Although this discovery could not solve Goldbach's conjecture, it would perfect his tools!

It could possibly let him apply his Group Structure Method to Goldbach's conjecture…

… Maybe?

His pen slowed down and stopped.

As Lu Zhou looked at the four pages in front of him, he could not continue to write.

He had lost his train of thought.

I was so close!

The clock kept ticking away and the sky outside the window gradually darkened.

Lu Zhou looked at his computer screen.

Suddenly, he realized that he had another un-read email.

He immediately sat up straight.

In his mind, he apologized to Professor Frank as he had nearly ignored his email.

The email was short.

Only one line.

[About the 750 GeV signal, I need to talk with you face to face… When do you have time?]

Chapter 232

The next morning, Lu Zhou got out of bed and turned off his alarm. He then checked his inbox and saw a reply.

[I'm going to Stony Brook University the day after tomorrow, and I'll stay there for around three days. If you are available, we can meet there.]

Lu Zhou looked at the calendar.

He had to do a lecture in two days, but he had already asked Professor Deligne for a vacation.

He then replied.

[Okay, let's meet the day after tomorrow. I'll contact you then.]

Frank's reply was short.

[Ok.]

…

New York was located on the east coast. It was the economic and cultural hub of the world, and one of America's major technology centers.

Many people know about Wall Street and the Statue of Liberty. However, few people know about one of the world's most advanced scientific research laboratory in Long Island: Brookhaven National Laboratory.

Many Nobel Prizes including Yang Zhenduo and Li Zhengdao's J particle discovery was born here. There were around 3,000 researchers and engineers here, and an average of more than 4,000 visiting scholars who worked here each year.

Although it was not as advanced as CERN, it was still impressive.

To a large extent, the meaning of the Hadron Collider lied here. On the surface, discovering a new particle did not seem like a big deal as it would not change people's lives in any way. However, the experiment attracted a large number of scholars and created cutting-edge equipment while forming a "scientific research ecosystem".

For example, the Hadron Collider's storage ring required harsh vacuumed conditions. This had led to the development of ultra-high-vacuum technology which had many industrial and medical uses.

A lot of civilian technologies were developed this way.

This laboratory was part of the Department of Energy but is managed by the Brookhaven Science Society, a company founded by Stony Brook University.

It was a Monday when Lu Zhou drove his new car to New York.

He had arranged to meet Professor Frank at a cafe near Stony Brook University. Lu Zhou did not know why, but all of the professors he had met liked coffee.

At around 12 o'clock in the coffee shop, Professor Frank arrived with a laptop in his hand.

“Sorry, I’m late. I had a meeting.”

Lu Zhou smiled and said, “No, it’s fine. I only just got here.”

Professor Frank sat across from Lu Zhou and said to the waiter, “I’ll have an Americano and a tuna sandwich.”

Waiter, “With sugar?”

“No, thanks.”

Professor Frank placed his laptop on the table and opened a document as he said to Lu Zhou, “You brought your USB, right?”

Lu Zhou nodded. He then took out a USB from his pocket and placed it on the table before he asked, “I did… Can you tell me what is it? Although I don’t mind drinking coffee with you, if we are just talking about experiment data, why can’t we do it over email?”

Professor Frank did not answer his question as he was busy playing with his laptop. He opened a graph and turned the computer around.

As Lu Zhou looked at the graph, he asked, “What is this?”

Professor Frank moved his chair closer to Lu Zhou and pointed at the graph.

“This is CERN’s latest experimental data. The two charts above are the distribution curves and statistical charts of the energy region as collected by ATLAS and CMS. You should be able to see why this graph is meaningful.”

Lu Zhou stared at the graph for a while before he said, “The confidence level has fallen?”

Professor Frank sighed and said, “Yes, no matter how many times we do the experiment, we can’t reach a confident level of 3-sigma. And the 750 GeV characteristic peak we saw last year has shrunk… That is why the confidence level decreased.”

Lu Zhou stared at the graph for a long time and did not speak.

He could guess why Professor Frank wanted to talk to him in person.

Professor Frank saw that Lu Zhou did not speak, so he continued.

“The Theoretical Physics Conference in Brussels was big. It’s a pity that you missed it…”

“… The latest discovery report on the accelerator was done by the newly elected 16th President of the CERN Council, Ms. Fabiola Gianano. The presentation was packed with people. Some even sat on the floor… ”

“… The report contained a lot of things and a whole 20 minutes was spent on the 750 GeV CERN discovery… ”

“… You should be able to understand this graph, or you can bring them back and study them,” said Professor Frank. He sighed and said, “Although it’s not that meaningful anymore.”

Lu Zhou did not look at the computer. Instead, he continued to look at Professor Frank and waited for him to speak.

Professor Frank shrugged and did not want to sound so depressed as he said, “But in any case, you’ve been a great help. From last year May till two months ago, a large influx of thesis was seen on arXiv. Many of them on physics models. Although they may not be correct, they are still useful. Also, the two theses that we co-wrote, has been referenced many times.”

Although Frank tried to comfort Lu Zhou, Lu Zhou was not comforted at all.

Lu Zhou had spent more than half a year on this project. For a theoretical physicist, half a year was nothing, but for Lu Zhou, it was different.

Not only because his precious time spent building the models were wasted, but also because his hopes of the 750 GeV had been crushed…

Lu Zhou took a deep breath and looked at Professor Frank before he said, “So, you’re saying?”

Professor Frank did not respond, which confirmed his hypothesis.

The old man stood up, took off his hat, and nodded as a show of thanks.

“It’s clear that from CERN’s experimental plan, that after January 1st, there will be no more experiments to retrieve the 750GeV characteristic peak anomaly. This is because every collision of the particle is money burnt. It has been a pleasure working with you. I sincerely thank you for your work, but…”

Professor Frank coughed and looked regretful as he said, “Logic tells us that it’s much easier to build a model that doesn’t contain 750 GeV particles, than looking for the particle.”

It was clear that this project was no longer meaningful.

Explaining the non-existence of a particle that could not be proven was not an experiment worth researching. Perhaps the experiment could help a few particle physicists published a few theses, but it was nothing “new”.

Lu Zhou was silent for a long time.

He made up his mind and said, “But I haven’t given up.”

Professor Frank did not say anything. Instead, he put on his hat and sighed, “Then I wish you good luck.”

Chapter 233

Unfortunately, even the upgraded Hadron Collider could only do experiments for “prime numbers under 100”. The theory was way ahead of the technology.

At the end of the meeting, Professor Frank dissolved the team.

Lu Zhou’s gains were merely two theses, co-signed with Professor Frank and his PhD students.

For him, this was definitely bad news.

However, Lu Zhou did not intend to give up.

Even though Professor Frank gave up, Lu Zhou would continue to research this project.

Mathematics was the language of God, and although Lu Zhou did not believe in God, he believed that mathematics would not deceive people.

Through his rigorous calculations, he predicted the appearance of the characteristic peak. Although he did not know why it disappeared, never for a second did he believed that it did not exist.

Otherwise, how else could anyone explain the detections from both ATLAS and CMS?

Could it just be quantum fluctuations?

The probability was too low for fluctuations to be observed by two detectors at the same time.

Lu Zhou originally planned on hanging around New York for a few more days but because of this bad news, he was no longer in the mood.

In the same afternoon, he drove back to Princeton.

It was already night time by the time he got back to his apartment. He bumped into Molina who was back from her night run. She was wearing a black sports bra and her golden hair moistened from sweat. She looked elegant and charming.

Molina glanced at Lu Zhou and noticed something. She teased him, “I can see that you’re not in a good mood.”

“Yeah.”

Molina raised her eyebrows and gloated, “Dumped?”

“I guess.”

Lu Zhou took out his keys. He then opened the door and went inside.

Molina looked at the door close. After a while, she whispered to herself, “I guess he really did get dumped…”

…

Excavating the 750 GeV characteristic peak required a Hadron Collider with a higher brightness detector and many other things…

Lu Zhou could predict the characteristic peak from calculations, but he could not prove the existence of this particle purely through theory. He could only perfect his model and then wait for CERN to verify his theory.

Unfortunately, many people had lost hope in this “750 GeV”.

Like Molina said, he was “dumped”, physics “dumped” him and left him alone.

Lu Zhou did not have any better ideas. He could only seek comfort in the arms of mathematics.

At least, improved his Group Structure Method. Perhaps this temporary depression could be turned into motivation and maybe helped him find the last piece of the conjecture.

Lu Zhou took a shower and went to bed early.

The next morning he woke up refreshed. He printed out the lecture slides and went to the mathematics building.

The mathematics building was the tallest building in all of Princeton. It represented the significance and status of mathematics at Princeton.

However, Lu Zhou was not here for an esoteric lecture. He was instead attending a number theory lecture with a bunch of undergrads.

As a winner of the Cole Prize in Number Theory, why did he have to waste time and listen to an undergrad lecture? Yesterday night in bed, he suddenly remembered a book he read in University of Jin Ling library.

That book was the autobiography of Mr. Yang Zhenduo, in which it contained a chapter about Fermi.

In the book, the author mentioned that Fermi advised him not to stay at Princeton for too long because that place was like a monastery.

Mr. Yang's biggest impression of Fermi was that Fermi loved to communicate with students. Fermi was keen on lecturing, organized seminars, and his students won six Nobel Prizes.

More than once, he mentioned that his ideal plan was to teach physics in a small Ivy League school and to write a book that contained all of the difficulties in physics.

From Vera's letter, Lu Zhou suddenly realized that while studying Goldbach's conjecture, he ignored some "well-known" things.

Helfgott's paper was very useful, but he skipped over a lot of things and was too brief. For Lu Zhou, the things that Helfgott skipped over were "obvious", but he missed out on many "obvious" details.

Abstraction should be done, only after careful scrutiny.

Lu Zhou hoped to recapture some basic principals and concepts and to see things from a different perspective as a way of inspiration.

Lu Zhou quietly walked into the classroom as he did not want to attract anyone's attention. He found a seat in the last row.

The lecturer was the current head of the mathematics department, Charles Fefferman, who solved calculus at 12 years old, doctorate at 20 years old, and by 22 years old, he was a professor of Chicago University. He was considered a super genius.

Charles looked at the class and stared at Lu Zhou's face for a second. He clearly recognized Lu Zhou. However, he did not say anything. Like usual, he wrote on the whiteboard and started his lecture.

Princeton's students were all exceptional. There were IMO competition finalists, Putnam competitors, and geniuses from all over the world attending this lecture.

Doing a lecture for these geniuses were obviously different than at a normal university.

Especially for those sloppy professors.

Charles was talking about the proof of the prime number theorem. When he wrote down the 20th line of proof, someone raised their hand.

"Professor, the value of the $\Phi(s)$ function should be 2 instead of 3!"

Obviously, someone had already studied the prime number proofs.

Charles turned around. He smiled calmly and said, “You’re right, but can you believe that even if this step is wrong, I can still prove the theorem.”

That student was stunned and whisperings were heard in the classroom.

From the whispers, Lu Zhou could feel a sense of disbelief coming from the students.

It was not just the students, but Lu Zhou himself was also in disbelief.

Lu Zhou was very rigorous toward calculations and he would never make a mistake.

However, Lu Zhou did not say anything. Instead, he patiently waited for the professor to finish the proof.

Charles did not say anything. Instead, he turned around and started to write on the whiteboard.

15 minutes went by and he finally finished his last line of calculations. Everyone in the classroom was stunned.

Especially the student that pointed out the mistake. His face was full of confusion.

That mistake was clearly there, but…

Charles solved it!

“I’ve personally researched the prime number theorem, and there’s around a dozen of them. The rigor of calculations is very important, but when we are at the frontier field, it’s more important to be logically self-consistent. This is not just for mathematics, but for all of science. As for why I could draw

the same conclusion, it's because I've tried numerous methods of proofs, and found out that most methods are the same…"

Charles smiled and gently wiped out the "3". He changed it to a "2" and said, "Of course, I was only manipulating the mistake. Student Smith is correct, the calculation result should be a 3, but whether it is a 2 or 3, we still satisfy the interval defined by function ζ(x)."

It was clear he knew this theorem inside and out, like the back of his hand.

Lu Zhou even suspected that Charles purposely made a mistake to demonstrate to these rookies.

Of course, his attention was not here.

"Same result but from different calculations?"

Lu Zhou repeated this sentence and went into deep thought.

His eyes gradually lit up.

He suddenly realized something.

The puzzle he had been searching for was in his own hands…

Chapter 234

He wrote five pages, six pages, seven pages…

Time slowly passed by.

The clock on the wall turned noon, then afternoon, then night.

Lu Zhou finished writing on the 16th page. He finally stopped the pen and looked at his research work.

“… Then this introduces Bombiere theorem, and the rest of the calculations are trivial… Done!”

Lu Zhou took a deep breath and leaned back in his chair. He took a deep breath and a smile finally emerged on his face.

Further down was the solution of Goldbach’s conjecture.

From now on, his “boat” was going into unknown territory.

However, he believed that he could do it.

This unreasonable but persistent belief was similar to what Andrew Wyles felt right after he saw the proof of Fermat’s last theorem.

When a tool was built, the mission of using the tool was nothing but a piece of cake.

The collection of over two centuries of research, several generations of Goldbach’s conjecture studies, finally came to this step.

Instead of arrogance, Lu Zhou only had honor in his heart.

He was honored to stand at the top of this building.

Lu Zhou took out his phone and sent a message to Deligne and his friends at Princeton. He told them that his research project was in its final stage and that he would be AFK for a while.

Then, he turned off his phone and locked himself in his tiny apartment…

If it went well, it should not take too long.

If it did not…

Then he would not be leaving his apartment!

…

The design of the Princeton Institute for Advanced Study was very interesting. The research and the lecture hall were designed together. In the middle of a lecture, people could take a break and eat at the research hall.

Also, the coffee machine was free to use.

Deligne sat in a corner of the restaurant. He was holding a thesis.

As an academic editor of [Annual Mathematics] and [Mathematics Chronicle], he usually had very little spare time, so he used his lunchtime to review theses.

Unless it was a particularly interesting thesis, he would not bring it back to his office.

Sitting across Deligne was Edward Witten. Edward asked with a smile, “How come I haven’t seen your new PhD student recently?”

Among all of the PhD students at Princeton, Witten respected Lu Zhou the most. Especially after Lu Zhou’s mathematical physics talents were put to use at CERN’s report, Witten saw himself in Lu Zhou.

Witten always wanted to discuss the 750 GeV characteristic peak with the young man, but unfortunately, he had never had the chance.

Professor Deligne was looking at the thesis when he simply answered, “He took a vacation.”

Witten, “Vacation?”

“Yeah,” sad Deligne with a nod. He then said, “He’s been researching Goldbach’s conjecture, so I approved a two-week vacation.”

“Goldbach’s conjecture…” said Witten. He was slightly surprised. He then said, “This is an interesting conjecture. I thought he was studying the standard conjecture with your research group.”

Deligne made a mark on the thesis as he said, “I invited him, but he wasn’t interested, so I didn’t persist. For a genius like him, it’s better to give him freedom than to force him to do anything.”

Suddenly, the phone on the table vibrated.

Deligne looked at the text and his eyebrows twitched.

[Dear Professor Deligne, I’m your student, Lu Zhou. Here’s the thing, my research has entered a critical stage and I need to retreat for a while. It could take a month, or… I’m not sure. In short, before the end of the year, I will give you a satisfactory explanation.]

Although Edward did not see what was on the phone, he could tell what it was from his old friend’s change of expression. He then asked, “Do you think he will succeed?”

Professor Deligne placed down his phone. He was expressionless.

After thinking for a moment, he sighed and shook his head.

“I don’t know, I just don’t agree with his research method. Retreating isn’t a good research method as he could bring himself to a dead end. If he was going to a meeting or conference, I would support him. I could even financially support him. But as of now, from my knowledge, he’s been locking himself in his room.”

Witten smiled and said, “But you still support his decision?”

‘Yeah, I gave him a year,” said Deligne. He shrugged and said with a tone of uncertainty, “After all, I may be wrong. His twin prime conjecture discovery at Princeton really surprised me. It even created a type of illusion for me…”

Witten, “Illusion?”

Deligne was silent for a while. He then said, “It’s like I saw Grothendieck.”

Edward Witten was stunned.

Grothendieck!

Father of modern algebraic geometry, the pope of modern mathematics!

Many people liked to compare young mathematicians to Faltings, or even Jean-Pierre Searle. Very few people compared mathematicians to Grothendieck as it would be too big of an exaggeration.

There was no more than five young mathematicians that could be compared to Grothendieck.

After a while, Witten said slowly, “That is… quite surprising.”

Chapter 235

After receiving the mission, he had been challenging Goldbach’s conjecture for almost half a year.

Finally, there was a result.

Lu Zhou took a deep breath and stood up.

He was almost at the finish line and he did not have to rush anymore.

Lu Zhou went into the kitchen and made himself a snack. He even took out a bottle of champagne from the refrigerator and poured himself a glass.

He bought this champagne two months ago just for this moment.

Lu Zhou quietly finished his food. He then went to wash his hand before he returned to his desk. He began to put an end to his work.

He started to continue where he left off.

[… Obviously, we have Px(1,1)≥P(x,x^{1/16})-(1/2)∑Px(x,p,x)-Q/2-x^(log4)…(30)]

[From equation (30), Lemma 8, Lemma 9, Lemma 10, it can be proved that theorem 1 holds.]

The so-called theorem 1 was the mathematical expression of Goldbach's conjecture in his thesis.

That was, given a sufficiently large even number N, there were two prime numbers P1 and P2 that satisfy N = P1 + P2.

Similar theorems were Chen's theorem N = P1 + P2.P3, there were an entire series of theorems about P(a,b).

Of course, although he labeled this as theorem 1 in his thesis, it would not be long before the mathematics community accepted his proof. After that, it could be upgraded to "Lu Zhou's theorem" or something like that.

However, the review process for this type of major conjecture was longer.

Perelman's proof of the Poincaré conjecture took three years to be recognized by the mathematics community. The proof of the conjecture was filled with a lot of "mysterious terms". Therefore, it was difficult for anyone but him to understand the thesis.

The speed at which a major conjecture was reviewed largely depended on the popularity of the conjecture.

When Lu Zhou proved the twin prime conjecture, he did not use a particularly novel theory. He only used the twin prime method mentioned in Zellberg's 1995 thesis. Therefore, people quickly understood his proof.

However, for Polignac's conjecture thesis, the review process took a long time.

Even though Lu Zhou used his already proven Group Structure Method, he made significant modifications and it became very different than the large sieve method. Even for a big name like Deligne, it would take a long time to review.

Lu Zhou wrote fifty pages for the Goldbach's conjecture thesis. Half of which was to discuss the theoretical framework he built for the proof.

This part could be published as a thesis on its own.

To a large extent, his review process depended on other people's interest in his work, and how accepting other people were.

As for how long it would take, it was out of his control.

Actually, Lu Zhou thought about what the system's criteria were for completing the mission.

If he completed the proof, but for decades, no one accepted his work, would he be stuck on this one mission?

What he was most confused about was where the system's large database came from. It must have come from a civilization far more advanced than humans.

Lu Zhou felt like the system would make its own judgment whether or not he proved the conjecture. The system would not rely on “humans”.

Lu Zhou’s conclusion was that the completion of his mission would depend on two factors.

The first was correctness.

The second was publishing!

Actually, there was a very simple way to verify if his proof was correct.

He did not have to publish in journals…

…

After proving Goldbach’s conjecture, Lu Zhou spent an entire three days sorting the thesis onto his computer. He converted it into PDF format and uploaded it onto arXiv.

He was almost certain that his thesis was correct because his habit was to carry out rigorous double checks on each line of conclusion. He would repeatedly scrutinize all possible errors.

As for publishing…

ArXiv did not have a peer-review process, so it was undoubtedly the fastest option!

The only drawback was that it could conflict with submission to other journals. For example, uploading the thesis before the deadline may violate some double submission rules, but Lu Zhou did not care about those things. He also believed that reputable journals would not care either.

After all, Lu Zhou was not some no-name guy. He was the winner of the Cole Prize in Number Theory. Plus his thesis was not some random work. It was the famous Goldbach's conjecture, the eighth question of Hilbert 23, which was one of the Millennium Prize Problems!

He would spend the next two days editing and organizing his thesis. After that, he would submit it to [Annual Mathematics].

When Fermat's last theorem was first proved, it took six peer reviewers to check the proof. Lu Zhou did not know how many reviewers he warranted, but it should be no less than four.

Lu Zhou looked at the "upload finish" message on his browser and took a deep breath.

Does this mean I've finished it?

After the publication of his thesis, someone in this field received an alert. Somewhere on this planet, someone was already reading his thesis.

However, Lu Zhou did not know if the system counted this as a successful submission.

Lu Zhou sat in front of the computer and took a deep breath. He then closed his eyes and whispered.

"System."

When he opened his eyes again, he was met with a pure white view.

It had been a long time since he came here. Lu Zhou almost felt uncomfortable.

He walked to the semi-transparent information screen and clicked on the mission panel.

He was going to see if his mission was completed…

He could also verify if his thought process was correct.

Wait a minute…

Lu Zhou realized a problem.

If the system did not respond, that either meant that his guess of the system mission evaluation process was wrong or that his thesis was wrong.

The system did not give him time to think.

A notification sound rang.

Then, a line of text appeared.

[Congratulations, User, for mission completion!]

Chapter 236

Granville flinched. His OCD prompted him to open the notification.

Once he read the title of the article, his mouth was wide open.

[Any even number greater than 2 can be expressed as the sum of two prime numbers.]

Isn’t this Euler’s statement of Goldbach’s conjecture?

Normally speaking, this type of thesis would be in the “general mathematics” section which would then be blocked by Granville’s settings.

Granville did not know why this thesis gave him a notification. He thought that the website must have malfunctioned.

He shook his head and was about to turn off his laptop and go to sleep when he suddenly noticed the name of the author.

Then…

He was stunned.

Lu Zhou?

The winner of the Cole Prize in Number Theory?

Solver of Zhou's conjecture, twin prime conjecture, and prime number?

This means that… Did he solve Goldbach's conjecture this year?

WTF?

Granville was instantly awake!

His sleepiness instantly went away and he sat in his chair for half a minute.

Then, he looked at the calendar to confirm that it was not April Fools' Day.

A fifty-page long thesis was normal for a conjecture of this size.

"I can't believe he solved Goldbach's conjecture… No way."

Granville opened the thesis and started reading.

He spent the entire night reading the thesis.

…

On the other side of the Atlantic, in École Normale Supérieure, a lecture on the weak Goldbach's conjecture was going on.

The lecturer was Helfgott.

"… The limit of the circle method is the weak Goldbach's conjecture. We can prove that any odd number greater than 7 can be expressed as the sum of three prime numbers, but it is difficult to generalize it to even numbers… "

"… Of course, my proof is far from perfect. There is a lot of room for improvement. If anyone in the audience is interested in this problem, I recommend you change your mind and research something else."

The lecture came to an end.

Next was the question and answering session.

There were both professors and students from École Normale Supérieure attending this lecture.

After a long time, a young man spoke.

"Professor Helfgott, how long do you think until Goldbach's conjecture is solved?"

Helfgott thought and said, “It depends on whether or not the tools used to solve the conjecture exists or not. In fact, I hope it is never solved. Look at what we have received? In order to solve this conjecture, we invented the sieve method, circle method… There is much more to be gained researching this problem.”

The lecture ended.

The crowd erupted in applause and Professor Helfgott left the lecture hall.

He did not stay there for long. Instead, he carried his briefcase and walked toward his office.

When he opened the door and before he could sit down, his student walked over with a horrified look.

“Professor! I saw a proof of Goldbach’s conjecture on arXiv!”

Helfgott placed his briefcase on the table and did not change his expression as he said calmly, “Amos, I’ve told you, you have to be more careful when reading theses on arXiv. There’s only one Perelman. You should look at some classic publications that I’ve given you, not ones that haven’t been peer-reviewed.”

Mathematics was different than computer science. For computer science, two months could be a century. Therefore, many people liked to first publish before they prove. Hence, they used arXiv frequently.

However, for mathematics, publishing without peer review meant nothing.

Amos had a helpless expression. He knew that his boss did not like arXiv but he still tried to explain, “But Professor, this thesis was written by the winner of Cole Prize in Number Theory! Surely his paper is legit.”

Helfgott froze and he had a surprised expression.

Not because of the Cole Prize award because he had met many people that had won the Cole Prize. It was because he knew who won the Cole Prize in Number Theory last year. He was there at Berkeley and the young Chinese man left a good impression on him.

Just what…

Why would he submit such a major conjecture on arXiv?

Helfgott changed his attitude. He felt that he should treat this thesis with caution. He could not ignore such a major discovery due to prejudice against arXiv.

He took out his glasses from his pocket and said, “Bring me the thesis.”

“Okay, professor!”

Amos went to the computer with enthusiasm and printed the thesis.

The printer quickly printed fifty warm pages which were then delivered to Helfgott.

Professor Helfgott adjusted his glasses and took out a pen as he started to read the thesis line by line.

Time slowly passed by…

Amos waited for a long time.

Finally, he was a little anxious and he could not help but ask, “Professor, is he correct?”

“I don’t know…,” said Professor Helfgott as he shook his head. He then placed the pen down as he said, “… But I haven’t found a mistake yet.”

It was impossible to verify a major conjecture in a short amount of time. Helfgott needed time and friends that were in this field.

Helfgott leaned back in his chair and closed his eyes as he started to think.

After five minutes, he opened his eyes and said to Amos.

"… He used a brand new method, I can see signs of the sieve method, and residual of the circle method… Of course, the most interesting part is the introduction of his own theoretical framework. I have seen similar ideas in Zellberg's thesis. As for whether or not his proof is correct, I can't make a decision yet. I need someone else's opinion…"

Chapter 237

Double Polignac's conjecture!

When Lu Zhou saw this number, he took in a deep breath before he felt ecstasy.

"System, open my characteristic panel!"

[

A. Mathematics: Level 5 (54,000/300,000)

B. Physics: Level 3 (53,100/100,000)

C. Biochemistry: Level 1 (4,000/10,000)

D. Engineering: Level 1 (0/10,000)

E. Materials science: Level 1 (3,000/10,000)

F. Energy science: Level 1 (0/10,000)

G. Information science: Level 1 (3,000/10,000)

General points: 2,475 (one lucky draw ticket)

]

As he leveled up his disciplines, it meant that he would be able to unlock more of the information in the system's database and that his understanding of the disciplines would further be strengthened.

Without him knowing it, he was already halfway from the maximum mathematics level.

As his mathematics level increased, the level limit of his other subjects also increased.

Perhaps it was time to upgrade other subjects?

Lu Zhou put these problems aside. He intended to look at the reward mission before he made a decision. Otherwise, if the system gave him another conjecture mission, he would not be able to tackle other subjects even if he wanted to.

Lu Zhou took a deep breath and clicked on the lucky draw icon.

The exciting lucky draw session came next.

The wheel started to spin.

Lu Zhou ordered the wheel to stop and it gradually came to a stop.

[Congratulations, user, a sample is given!

[Acquired: Brainwave Sampler (one time use) (Description:…)]

Lu Zhou read the message and was stunned.

He was a little disappointed that he did not get the blueprint.

However, when he saw the sample, his disappointment was replaced by surprise.

In his inventory, a pen-shaped thing appeared.

Obviously, this pen was not for writing.

It could be used to record voices from the brain!

Lu Zhou carefully read the description. According to the system, this “recording pen” could be used to acquire certain brain wave signals from someone. It had a maximum range of three meters and could block out unwanted signals.

The acquired brainwave signals would be then analyzed by special software to figure out what the target had in their brain.

Most of the result was memory fragments.

These memory fragments would then be transformed into audio, image, and text files.

In a sense, this device was a mind reader.

With some suggestive techniques, the subject could be subconsciously manipulated into a certain memory. In theory, he could steal any secrets from a person’s brain…

Lu Zhou's palms started to sweat.

This is what future technology is like?

Lu Zhou guessed that in a society with this technology, it would be heavily governed by laws and regulations. Like the ban on guns, brain scanning technology would be prohibited.

For example, this thing might be restricted to only medical use or for licensed medical professionals only. With some suggestive guidance, patients with memory loss could restore their memory.

Or it could be used by spy agencies…

That possibility seemed scary.

Lu Zhou stood in front of the information screen for a long time as he did not know what to use it for.

Maybe he could steal a billionaire's bank account? Lu Zhou would not do anything illegal though.

Maybe he could listen to other people's secrets? However, he was not interested in other people.

Lu Zhou finally decided to close the inventory tab. He had decided to keep it just in case of a rainy day.

In fact, he wished that he would never have to use this thing.

Even if it was only for one-time use.

Lu Zhou looked at the mission panel.

Due to the difficulty of Goldbach's conjecture, the system gave him an S+ evaluation.

Therefore, his next mission would be a reward mission which was a relatively easier mission.

Lu Zhou took a deep breath and prayed before he opened the mission panel.

[

[Reward mission is activated! (Give up at any time without spending general points)

Description: Mathematics is the foundation of the sciences, but it is not all of science. User has reached level five mathematics, why not try other areas?

Requirements: Publish any thesis in a journal or conference. The reward will be based on the content value. (User can choose any thesis for mission completion).

Reward: 1~??? subject experience points. (Mathematics experience points consist of a 0.5 ratio penalty, other subjects consist of a 1.25 ratio bonus).

]

When Lu Zhou looked at the mission, he was stunned.

He was just thinking if he should develop in other areas and this mission came along.

Maybe this was God's plan?

…

Lu Zhou spent three days editing and cleaning up his thesis. He then submitted it to [Annual Mathematics].

Of course, it was not for the mission.

According to the mission, he could choose any thesis that he wanted for mission completion.

On the fourth day, Lu Zhou woke up early.

He walked outside and bumped into Molina who was going on her morning run.

When Molina saw Lu Zhou walking out of his apartment, she was stunned.

“How… How long has it been since you went outside?”

“A month… Why?”

I bought groceries last month. Does that count as going outside?

Molina shook her head and asked, “Is there any progress in your project?”

Lu Zhou, “I solved it. I just uploaded it on arXiv.”

“Oh, solved… What?!” Molina looked like she saw a ghost as she stared at Lu Zhou with her big blue eyes. She then said, “You solved it? Wait a minute, it’s already May, April Fools’ Day was a long time ago…”

Lu Zhou looked at Molina’s astonished face and smiled as he said, “Trust me, it’s not an April Fools’ joke. It’s not even the same date. If you don’t believe me, you can check on arXiv yourself.”

Not everyone kept up to date with Goldbach's conjecture research. Furthermore, the thesis had only been online for three days, so it was not that unusual that Molina had not seen it. After all, this was unlike your friends' news feed. Most people only paid attention to their own field of research.

Molina stared at Lu Zhou and she saw that Lu Zhou was not joking. She then took a deep breath and digested this new information.

Goldbach's conjecture.

Although she was not in this field, she was well aware of the status of this conjecture in number theory.

If what he said was true, then there is no doubt he will become the youngest professor at Princeton…

She took a deep breath and asked, "What plans do you have now?"

Lu Zhou looked outside the apartment and yawned before he said, "Plans? I'm going to eat breakfast."

Molina: "…"

Chapter 238

For example, some people liked to submit to arXiv before the peer review. One could guess the identity of the author from the abstract grammar style and wording.

Without a question, this thesis was Lu Zhou's. After all, it was not Deligne's first time reviewing Lu Zhou's thesis.

As Deligne continued to read the thesis, he started to frown.

Suddenly, he looked up at his PhD student and said, "Smith, go to the restaurant later and bring me a bacon sandwich and a coffee."

Smith stretched and stood up before he said, "Okay, professor… Eating in the office today?"

“Yes,” said Deligne. He turned on the printer and took out his glasses from his pocket before he said, “There’s an interesting thesis waiting for me.”

…

It had been five days but Lu Zhou did not hear any news. It was almost as if his thesis was tossed into the water.

However, on the sixth day, he received an unexpected call.

It was from Qiu Chengtong.

Professor Qiu only said one thing, “You proved it?!”

When Lu Zhou heard his question, he nodded and answered, “If you’re talking about Goldbach’s conjecture… Then yeah, I proved it.”

The other end of the telephone went silent.

Qiu Chengtong was shocked. He did not know what to say.

He had seen many talented young mathematicians like Tao Zhexuan, who taught in California, or Yunzhi, who taught at Yale… They had all made outstanding research results in their respective fields.

However, Lu Zhou was undoubtedly the most eye-catching one and the one that surprised him the most.

Back then, he only wanted to nudge Lu Zhou in the direction of Goldbach’s conjecture. He had not expected Lu Zhou to solve it.

After all, both the circle method and sieve method were exhausted. Even though Lu Zhou had experience researching prime numbers, it was almost impossible to solve this conjecture in such a short amount of time.

Lu Zhou's performance completely went beyond his expectations.

Qiu Chengtong took a deep breath and asked with a serious tone, "How confident are you?"

Lu Zhou thought for a moment before he answered, "Above 90%."

He actually wanted to say 100% since the system approved his thesis. However, he wanted to be more modest as the review could give him a hard time. He was 100% confident that it was correct, but he was not 100% confident that it would be accepted and approved by the community.

When Professor Qiu heard Lu Zhou's reply, he nodded.

His research focus on partial differential equations and differential geometry, and even a little mathematical physics. However, he was not in the field of number theory, so he could not objectively evaluate Lu Zhou's thesis.

However if Lu Zhou said he was 90% confident, that meant that the thesis had no problems.

Professor Qiu paused for a moment before he said with emotion, "The death of Hua Luogeng devastated the entire Hua Luogeng School. The two mountains also suppressed the community. Honestly, I didn't expect you to solve Goldbach's conjecture. I wanted you to just challenge it as studying Goldbach's conjecture would definitely help your understanding of prime numbers. Even if you couldn't solve the problem, it could give you useful knowledge and experience… But now it seems that I underestimated you."

The Hua Luogeng School was an internationally renowned "Analytic Number Theory School", also known as Shuimu School.

Lu Zhou knew of Professor Qiu's trouble with Yan University, so he could probably guess what he meant by the two mountains.

However, he did not want to participate in this conversation, so he only smiled and did not respond.

Professor Qiu smiled and said, "Once you graduated, would you be interested in becoming a professor at Shuimu?"

Lu Zhou thought for a moment. He then smiled and said, "I'll probably become a professor at Princeton for two years. As for after returning to China, I already promised that I'll return to my school."

Qiu Chengtong did not say much. Instead, he nodded and said, "Okay then, the University of Jin Ling is good. Academic needs collision and sublimation of thinking as it is a blooming process. The University of Jin Ling is a good place and it's within the academic circle. It's good that you want to pursue academia there."

Going to Shuimu was equivalent to going against Yan University, and Professor Qiu was aware of this.

If Lu Zhou was only an average scholar, he would definitely try his best to convince Lu Zhou to come to Shuimu, to fight the mountains.

However, Professor Qiu could not bear to watch Lu Zhou's talents wasted on things outside of academia.

At least between 20 and 40 years old, Lu Zhou's talents should be on academia, and not the academic circle.

The two chatted for a bit before they ended the call.

However, just as Lu Zhou was about to eat dinner, he received another phone call.

This time it was his supervisor, Professor Deligne.

…

Lu Zhou came to the Institute for Advanced Study because of Deligne's phone call.

Since taking a vacation, he had not been here in two months. He nearly got lost when he entered through the side door.

Lu Zhou finally found Deligne's office and knocked.

When Deligne saw Lu Zhou, he took off his glasses and rubbed his eyebrows.

"I've already read your thesis… Honestly, Goldbach's conjecture is beyond my field of study. My own opinions can't decide anything on a major conjecture like this. Furthermore, I'm your supervisor."

Lu Zhou understood what Professor Deligne meant.

After all, Goldbach's conjecture was not like Polignac's conjecture or the twin prime conjecture. Even though it was less significant than Fermat's last theorem, it still deserved to be taken seriously by the entire number theory community.

When he submitted it to Annual Mathematics, he did not specify an academic editor. Annual Mathematics must have given the thesis to Deligne.

Lu Zhou asked, "What do you want me to do?"

Deligne said, "I'll arrange a one hour report with the Princeton Institute for Advanced Study. You'll have to prepare a PowerPoint and speech. I can arrange for someone to help you with the presentation. Also, you have to tell me when you're free."

Lu Zhou asked, "I'm always free. The thing is… Is there an academic conference in the near future?"

He had been paying attention to academic conferences. If he recalled correctly, there were no major conferences planned in May.

“Nope, but that doesn’t matter,” said Professor Deligne. He paused for a second before he said, “Your research result is good enough for other scholars to make a special trip to Princeton.”

Professor Deligne spoke concisely.

If there were no academic conferences, he could just schedule one.

Chapter 239

Due to many professors mentioning this matter in class, the discussion spread from the academic circle to online.

It was not just scholars who were discussing this matter, but all university mathematics majors were talking about this thesis.

The discussion began on an online Fields Medal forum.

[Ok! I know that he solved the twin prime conjecture and Polignac’s conjecture, but in class, my professor told us that Goldbach’s conjecture is on a completely different level. It’s like the minor leagues compared to the Super Bowl. To put it bluntly, I don’t think his thesis is correct. There must be a problem somewhere. It will probably be discovered in the near future.]

[Who is your professor?]

[James Maynard! 2014 SASTRA Ramanujan Gold Award winner! 2018 Fields Medal candidate! I think his opinion is quite trustworthy.]

[Oh, Maynard, I’ve heard of him before, the British who studied prime spacing? I heard that after Zhang Yitang calculated 70 million, he’s been challenging the twin prime conjecture. Now Lu Zhou solved the conjecture instead, is he pissed off?]

[Haha!]

[I disagree with you, my professor's evaluation of this thesis is high. He believes that the Group Structure Method will become a promising analytical tool for analytic number theory.]

[Oh? Who is your professor? To be honest, in the field of number theory, especially prime numbers, not everyone has the ability to understand and review the thesis.]

[Tao Zhexuan.]

[…]

…

There was no peer review on Arxiv, so the correctness of the thesis was yet to be determined. It would be a matter of time before the public would know if this mathematics problem was solved correctly.

However, most people knew that the mathematics community would not take too long to verify this research.

The second week after Lu Zhou uploaded the thesis, the Princeton Institute for Advanced Study announced a message on their website.

Next Monday, Lu Zhou would make a one-hour speech on the Goldbach's conjecture at Lecture Hall 1 of the Princeton Institute for Advanced Study.

Since this announcement came out, all of the arguments about the correctness of the thesis turned into the discussion about the report itself.

Many people were still skeptical. Mostly because they could not understand the Group Structure Method, and that Arxiv did not have a peer-review process. However, if there was a report at a

prestigious place like the Princeton Institute for Advanced Study, many unsolved questions regarding the thesis would be answered.

Due to this, Lu Zhou had been preparing for this speech seriously. He did not want to take this lightly just because the system recognized his work.

The key to a mathematics conjecture being proved was logical self-consistency. It also depended on if it was recognized by peers. As the prover of this conjecture, Lu Zhou had to explain his own theory and answer and to remove all doubts.

Lu Zhou did not care to let go of a single tiny detail as very often, many traps were hidden in “trivial” matters.

Even Wiles was stuck on tiny details when proving Fermat’s last theorem, and this delayed his thesis by an entire year. If it was not for his friends’ encouragement, he would have admitted defeat long ago.

Lu Zhou could not help but think.

He finally realized how useful it was to have a student working for him.

Lu Zhou could just ask the student to look over his report content. He would then asked the student to circle areas where they did not understand. Through this method, he would know which areas his peers found difficult.

Unfortunately, even though Professor Deligne gave him a PhD student for help, the PhD student did not help him on the theoretical aspects, only the PowerPoint slides.

Although Lu Zhou wanted to ask him which part of the thesis he did not understand, he would be completely confused as the thesis was completely incomprehensible to him.

This was due to the fact that the PhD student’s research direction was algebraic geometry. As such, he was not well-versed in the circle method or sieve method at all.

…

Time slowly passed by, and it was finally the report presentation day.

A crowd of mathematicians came to Princeton bringing with them their excitement and liveliness.

Princeton was quite attentive to the reception of mathematicians from all over the world.

The Princeton Institute for Advanced Study arranged for all of the mathematicians who participated in the conference to stay at the Princeton Hotel opposite Palmer Square.

Also, Princeton had not only arranged a conference during the day, but there was also a celebration party full of food at night.

However, Lu Zhou did not have time to think about these things. For him, every second before the report was valuable.

The next afternoon, at Lecture Hall 1 of the Princeton Institute for Advanced Study.

In addition to scholars who were invited to this conference, there were also unsolicited students. Some of them came with their supervisors, some were studying at Princeton, others even came all the way from Philadelphia or New York.

They did not know the specific time of the conference, so they got here in the early morning to reserve a spot.

For those people that arrived late, they simply sat on the aisles between the seats. Some people even sat outside in the corridor, with the news reporters.

The report was going to start at 2 pm and it would end at 3 pm. However, it might be extended depending on the number of questions asked.

If everything went well, after this conference, the editorial department of the Princeton Institute for Advanced Study would organize a jury of four to six people. These juries would review the manuscript before they determined whether or not his thesis passes.

The success of Lu Zhou's thesis depended on his abilities to explain the Group Structure Method.

Lu Zhou sat in the backstage of the lecture hall. He looked at the time on his phone before he took a deep breath.

There were five minutes left.

This was the tenth time he looked at the time on his phone.

He could not count how many times he took a deep breath.

Prior to this, Lu Zhou was informed by Professor Deligne on the number of people attending the conference.

There were more than 150 well-known scholars invited to this event. Some were from Paris, Germany, and China. He even knew some of the people coming.

In addition to the mathematics community, there were also media reporters from all over the world who were attending as well.

Soon, he would be standing in the spotlight of the world while drawing a picture of a century-old problem.

A staff member of the Institute for Advanced Study walked into the preparation room and he asked Lu Zhou respectfully, "Mr. Lu, it's about time. Are you ready?"

Lu Zhou did not answer.

He turned around and looked at himself in the mirror before he reached out and adjusted his tie.

He took one final deep breath and smiled at himself in the mirror.

“I’m ready.”

Chapter 240

Lu Zhou thanked the audience for coming. He then started to describe the reporting process.

“My presentation will be divided into two parts. One part is on the Group Structure Method that I used to prove Goldbach’s conjecture, and the other part is on the proof of Goldbach’s conjecture.”

“I’m guessing that everyone has read the thesis already. I’ll keep my explanation of the thesis brief, and explain the cumbersome steps in the PowerPoint. I’ll focus on ideas and steps in my explanation.”

“Also, I will try to leave as much time as possible for the questions and answers session.”

Pre-reading the thesis before the report was common practice in the academic community. If someone asked a question that was explained in the thesis, it would be considered extremely rude.

Obviously, this would not happen with an audience like this.

Similarly, the parts of the thesis that was explained clearly would not be explained again on the PowerPoint. Everyone’s time was precious, and they did not come to Princeton to watch slides.

After the opening remarks, Lu Zhou went straight into the topic.

“The so-called “Group Structure Method” is the abbreviation of “The Whole Structure Research Method Of Group Theory”. The core idea is to use the concept of a cyclic group to study the problem of infinity from the whole. Based on integer modulus, a p multiplication group is always a cyclic group. This theorem…”

Lu Zhou pointed at the slides with his laser pointer.

[… there is a limit group G and |G|=p1α1p2α2⋯piαi, where pi is a prime number and αi is a positive integer. Let p∈π(G), define deg(p)=|{q∈π(G)|p~q).]

[The number of times deg(p) is the vertex p. Redefine C(G)=…]

Compared to the latter half of Goldbach's conjecture's proof, the Goldbach's conjecture explanation was more crucial. As long as the audience understood the Group Structure Method, they could figure out how Lu Zhou solved Goldbach's conjecture.

Therefore, Lu Zhou was extra meticulous when explaining. He tried to make every point as clear as possible.

The people in the crowd, whether it was invited scholars or unsolicited students, they were all listening intently.

Especially James Maynard. He sat in the middle of the venue and listened carefully.

He was also a leader in the field of analytical number theory in the United Kingdom. He was one of the hottest candidates for the Fields Medal, and he had originally intended to use the twin prime number problem to win the 18-year Fields Prize, but his glory was snatched by Lu Zhou.

One of the main reasons he came over from the UK was to create problems for his opponent.

However…

The more he watched, the more intrigued he was.

The logic of the Chinese scholar had reached an impenetrable level. In fact, he even wanted to cheer for him.

Sitting next to him was his PhD student, also an English bloke named Evan.

Evan looked at the lines of text on stage, and he started to feel lost.

Finally, he could not help but ask quietly.

“Professor, what exactly is the Group Structure Method?”

Maynard stared at the PowerPoint. He was extremely still.

He did not want to answer.

He did not want to miss any crucial details and get distracted. He was also afraid that he would not be able to convey the beauty of the Group Structure Method accurately. Just yesterday, he was talking trash about this fifty-page thesis on his blog, and how he was going to expose this Chinese person during the report at Princeton.

Even though he did not want to admit it, the skill gap between him and Lu Zhou was astronomical.

It did not matter whether or not he wanted to admit it because that was how mathematics was.

On the other side, in the back row of the lecture hall, two old people sat in the corner in a low-key manner as they watched the report and whispered to each other.

“I only left for a few years. I didn’t expect Princeton Institute for Advanced Study was able to produce another talent,” said Andrew Wiles while he looked at the young man on stage. He then nodded and said, “Not bad, it reminds me of myself.”

Since Andrew Wiles returned to Oxford in 2011, he rarely returned to Princeton Institute for Advanced Study. Princeton gave the role of head of mathematics to another genius: Charles Fefferman.

Andrew was talking about twenty years ago when the Newton Institute hosted the most important mathematics conference of the century. Only a quarter of the audience understood what was going on.

As for the remaining three quarters, they witnessed history.

It was the same now.

Although Goldbach's conjecture was more like an IQ test than the widely applicable Fermat's last theorem, this IQ test was one of Hilbert's questions. It had a significant status in the field of number theory.

Solving it would not change the world, but the tools created when solving this problem were valuable to the entire mathematics community.

Without a doubt, everyone in the audience was witnessing history.

"Oh," Deligne's mouth twitched with a smile. He said, "Who was it that wanted to apologize to the New York Times, and return the open champagne?"

Wiles coughed and said, "A person can only become inspired in a moment of desperation. I was only pushing myself… In the end, I succeeded."

Deligne said, "Didn't you say it was for the art last time?"

"Fine, my good friend, let's change the topic," said Wiles. He looked at the content on the stage and asked, "I don't really understand Goldbach's conjecture. In your opinion, does his thesis count as proof?"

Deligne, "You should ask Iwaniec and Faltings this question. They are truly experts in analytic number theory. I'm only involved in the prime number problem. Of course, after reading his thesis, I'm quite optimistic."

If he was not optimistic, he would not have arranged this report.

Wiles asked in surprise, “Faltings is here?”

“Not only is he here,” said Deligne. He paused for a moment before saying, “He didn’t want to miss it…”

Suddenly, the audience gasped.

Gasped in astonishment.

Their gasp also contained praise.

Deligne and Wiles stopped talking and looked up.

After a while, Wiles smiled and said, “It seems that our worries were redundant.”

Deligne looked at the equations on stage and finally gave him a gratifying smile.

“I was never worried.”