しぶんぎ社，中野太郎氏の記事「最近のIUT界隈」に関するコメント｜Reiya Tachihara

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Edit history: June 9, 2024
・Obvious typo correction
・Added addendum D-2a3 between comment D-2 and comment D-3 (correction and apology for the part I made a mistake)
・Reflect the above changes in the “Summary” section, etc.
(In order to clearly record my own error, I will not delete the original statement on this point.)

If you understand Japanese, please skip this English part (the same thing is written in Japanese right below).

Note:

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- In writing and releasing this article, no confirmation or permission has been obtained from Associate Professor Yuichiro Hoshi, the supervising professor of me at the graduate school (RIMS), or from Professor Shinichi Mochizuki, one of the co-supervisors of me, or any other university affiliates. This article has been **written and released solely based on the personal will and responsibility of me, Reiya Tachihara** .

overview

An article by Taro Nakano of Shibungisha, which is attracting attention for its negative tone regarding the interuniversal Teichmuller theory (IUT theory), " Recent IUT area - tar0log (4bungi.jp) ," (June 8, 2024) Please comment on the contents of ``Access". While there are some points that I can agree with/make sense, I also found many points that are questionable or incorrect throughout, and I would like to point out these as well. A ``Summary" section is also provided for readers who do not have the time to fully read this lengthy article. If you have read Taro Nakano's article and learned about the current state of IUT theory, please read this article as well to reach a more appropriate understanding. I ask that you do not take Mr. Taro Nakano's article at face value, nor do you take this article at face value, but rather consider the objective evidence properly, and then think carefully and make your own decisions. . .

some notes

- To avoid malicious editing, cutting, etc., when sharing the contents of this article, please be sure to **clearly indicate the link to the relevant web page** .

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- When writing and publishing this article, we received confirmation and permission from Associate Professor Yuichiro Hoshi, the supervisor at the author's graduate school, Professor Shinichi Mochizuki, one of his co-supervisors, and other university officials. I haven't gotten anything. **This article was written and published based on Reiya Tachihara's personal will and responsibility** .

- I have no problem with labeling the author of this article, Reiya Tachihara (hereinafter referred to as ``me''), as ``the Mochizuki group'' or ``the IUT faction'', etc., but please be sure to **properly understand the content of this article . We ask that you refrain from making judgments about anything without reading it** .

- If you discuss something while carefully providing evidence, the description tends to become long, which increases the burden on the reader. This article is no exception. Due to this inevitable principle, **only biased, oversimplified, and crude descriptions with superficial impact are often read, and only such crude understandings are shared. If so, that would be sad** . In order to avoid this as much as possible, in this article, while making the actual comments with careful evidence, we also include a relatively brief ``Summary'' section. Readers who are short on time should first refer to the ``Sharing Assumptions and Initial Comments'' section and the ``Summary'' section.

- This is a prelude to the "impressions" section at the end of this article, but non-mathematical "social activities" like writing this article are, for me at this point, an "irregular" decision in many ways. , we may not necessarily be able to take the time to respond to the opinions and impressions we receive regarding this article. However, constructive opinions and impressions (even if they are negative) after reading through the contents of this article are not rejected, but rather welcomed. Please do not hesitate to point out any errors, including those unrelated to the essential content (minor typographical errors such as incorrect kanji).

- For those who are interested in mathematical explanations related to the interuniversal Teichmuller theory (IUT theory), we have included explanations that can be understood by master's level (?) knowledge of number theory (local class field theory). Therefore, please refer to Supplement 2 of Comment A-6. However, at the time of writing, I am still in the process of studying IUT theory, and **this article is not intended to make any claims regarding the mathematical success or failure of IUT theory** . (It is not an academically honest attitude to make positive or negative statements (especially openly and categorically) about the mathematical success or failure of a mathematical theory without being based on one's own solid mathematical understanding. It seems not.)

中野太郎氏の記事へのコメント

はじめに

時間的余裕のない読者に関しては，最初の2節，つまり「前提の共有と最初のコメント」節および「要約」節をお読みいただくことで，本記事の大雑把な内容を把握して頂くことができる．その後の4節は実際に細かくコメントを行う部分である．

ただし，当たり前のことだが，**本記事の全体に対して何か公然と意見を発せられる読者**に関しては，この要約部分の内容のみに基づくのではなく，**本記事の全体をきちんと読んで頂く**よう，心よりお願い申し上げる．特に，本文中では詳細な根拠を示した部分を，要約部では単に主張だけを述

べていたりもしているので，注意して頂きたい．逆に，**一部しか読まずにコメントを行う際は，どの部分を読んだ上でのコメントであるか，はっきり明記して頂く**よう，お願い申し上げる．

Share your premise and be the first to comment

First of all, it is clear from the content of the article that Mr. Taro Nakano the recent article on IUT - tar0log (4bungi.jp) has a thoroughly negative position regarding IUT theory in . (Personally, I find it strange that such a thorough stance can be taken without any mathematical understanding of the content.However, the intention of writing this article is not to criticize this stance itself, but rather to provide an objective explanation. The purpose of this article is to make various comments from various standpoints, and in particular to discuss misconceptions and distortions of facts.) The the article (Recent IUT Area - tar0log (4bungi.jp)) actual content of begins with the preface quoted below. . .

> There are two main reasons why IUT has fallen into disrepute and been abandoned. This is a question of mathematics and the academic integrity of Mr. Mochizuki and those around him. I think the latter is the essential reason why IUT was abandoned by the mathematics community, but Ishikura and other pure-minded people who seem to have high hopes for IUT even mention the former problem. For some reason, I don't touch on the latter issue at all.

," by Taro Nakano, Shibungisha Quoted from the article " Recent IUT area - tar0log (4bungi.jp) (accessed June 4, 2024)

(Although I have some doubts as to what it means when a mathematical theory is "abandoned.") After this introduction, Mr. Taro Nakano talks about the current state of IUT theory as a "problem as a mathematics." The discussion is divided into ``Academic Integrity Issues" and ``Recent Movements." Therefore, this article will be divided into sections and comments based on this. However, since the "Recent developments" section in Taro Nakano's article contains two separate pieces of content, this section will be further divided into two before commenting.

Before that, I would like to offer some comments that can be made about the article as a whole rather than "each section".

Comment Z-1: The most important comment I would like to make is that there are parts of Taro Nakano's article that lack logical consistency and (perhaps unconsciously?) confused statements. For example, some people use the neutral expression ``the correctness of the theory is being called into question" (actually, there is some criticism (see comment B-9), but at first glance, this is a neutral expression). By adopting this method, the article appears to be written from a neutral perspective, while the important section on ``Problems in Mathematics" makes it seem as if ``There are problems from the perspective of mathematical correctness." They adopted a style of writing that could only be read as "already determined" (not consistent with the reality) (see section A), and continued to carry that bias (perhaps unconsciously?) into discussions (see sections B onwards).). In addition, while in some places Mr. Mochizuki makes it seem as if he has not made any effort to explain the theory (see comment C-7), in other places he makes exactly the same statement (which is negative towards the IUT theory). There are also sections where he cites explanatory documents that can only be interpreted as the result of efforts in this direction (see comment B-5). The important thing is not to be fooled by such logically inconsistent and confusing descriptions, that is, to not be fooled by the superficial parts of the descriptions, but to understand the substantive meaning and content, and thoroughly investigate the basis for it. It is something to think about. (End of Z-1)

Comment Z-2: Generally speaking, things are often inherently complex, and if we prioritize the desire to simplify them over the facts, we make mistakes in judgment. An important aspect of human intelligence is

the ability to grasp inherently complex things as they are. For example, even if Mr. Taro Nakano's points about Shinichi Mochizuki's behavior clearly contain some valid points, that does not mean that Mr. Mochizuki is a strange person and Mr. Taro Nakano is a decent person. content of this article, which is strongly negative about Mr. Mochizuki, is generally or completely correct." **So, it would be strange and unfortunate if** the It is. (End of Z-2)

summary

Before actually commenting, I would like to summarize what the content of Taro Nakano's article is and what kind of comments can be made in response to it. The ``summary", which would normally be placed after the comments **been placed first here (for the convenience of readers who do not have time to read through it) .** , may have
Readers who plan to read through the body of the comment can skip this section.

先に述べた「**はじめに**」**節の2段落目の注意を守っていただくよう**，改めてお願い申し上げた上で，内容に入ろう.

First, in the ``Mathematical Problems" section of the article (see Section A), Taro Nakano points out the points made by Messrs. Scholze and Stix (hereinafter referred to as the Scholze-Stix Report) and points out that ``Mathematics "There is a fatal problem" as if it were a definite fact, but this statement **simply contradicts the facts** . Mr. Mochizuki made a rebuttal , and as detailed in the main text, it was Mr. Scholze and Mr. Stix who ignored it (without rebutting it) and unilaterally withdrew from the discussion (see comment A-3 for details). reference). In addition, Taro Nakano refers to the table (Table 1) in a certain paper and states that there are several mathematicians who have pointed out the problem in IUT theory (the same part as pointed out by Messrs. Scholze and Stix). , the specific name of the mathematician cannot be read from the table, making it inappropriate as a reference (comment A-4).

Mr. Taro Nakano's point that ``IUT theory is being received negatively overseas" is true at a certain level, but ultimately the mathematical basis for how it is received (which has already been refuted by Mr. Mochizuki) is true. (Comment A-4 , A-5, A-7). Mr. Nakano's way of arguing that the negative atmosphere that has been amplified in this way becomes the basis for further "denial" beyond its original epicenter **is a kind of circular reasoning. It's just a thing** (comment A-7). Although he was originally a ``denier", he realized his own misunderstanding after trying to show the basis for his ``denial" in a formal mathematical form, and changed his position to a ``affirmer." An example is Mr. Lepage (see supplementary comment A-4 for details). On the other hand, the points made by Messrs. Scholze and Stix do not even have a formal basis mathematically, as Mr. Mochizuki points out (for details, see Comment A-6 Supplement 1).

By the way, I also have a certain mathematical basis based on my own mathematical expertise (which I originally did not want to write about since I have not yet established a strict mathematical understanding at this point). Therefore, (apart from the mathematical success or failure of the IUT theory), I have a feeling that I am almost convinced that the points made by Messrs. Scholze and Stix are wrong (for details, see Comment A-6 Supplement 2 and Comment A-6 Supplement 3).). In other words, for me, I have no positive grounds to doubt the IUT theory (even though it is a general premise that we cannot know whether a theory is right or wrong until we understand it strictly). In particular, Comment A-6 Supplement 2 provides a relatively mathematical explanation, so those with an interest (and knowledge of local class field theory) should refer to it. Furthermore, if there is a situation in which the voices of those who adhere to the common sense of ``not making judgments about things that I do not understand" are harder to hear than those who do not, then what is the current situation? If so, that would be extremely unfortunate (even if the IUT theory is wrong, independent of it).

Mr. Taro Nakano proceeds with his argument to the ``issue of academic integrity" based on the above-

mentioned ``problems in mathematics'' (see section B). Mr. Hajime criticizes Mr. Mochizuki and the review team for not even quoting the points raised by Messrs. Scholze and Stix, and for publishing the IUT paper as if it had never happened. In this regard, the first thing I would like to point out is that whether or not a particular point should be cited depends on its mathematical content. Therefore, it is natural that without a mathematical understanding of the content, it is impossible to evaluate the pros and cons of quoting it.If a great mathematician points out something, it must be cited, which is a resolution argument. If so, it **is far from an academic attitude** (comment B-1). Furthermore, ``pretend it never happened'' **is simply wrong** , and as mentioned above, Mr. Mochizuki has accepted the point and refuted it (comment B-2).

Taro Nakano also harshly criticized the fact that the paper was published in PRIMS magazine, where Mochizuki serves as the editor-in-chief, calling it ``practically self-produced,'' and said that the fact that Mochizuki was excluded from the peer review process was Although he acknowledges this, he strongly doubts the existence of ``sounda.'' Regarding this, it is not strange to submit to a journal where one is the editor-in-chief in ``normal times'', and (naturally) there was no controversy regarding the theory at the time of submitting the paper. I would like to point out that it was "normal times" (comment B-3). to negatively evaluate Mr. Mochizuki's ``academic integrity'' based on this **Therefore, it is completely off base** . In addition, the "sodon" **the special editorial committee** (one of whose members is, for example, Masaki Kashihara, a world-authorized mathematician) **a complete insult and blasphemy to** is **, and it is simply an unrealistic assumption.** (See comment B-4 for details).

It has been pointed out that ``Mr. Mochizuki explanatory papers calls Messrs. Scholze and Stix by the derisive name RCS (=redundant copies school) in his on IUT theory,'' but this also has an element of ridicule. I can't find it and it seems out of place. The intended use of the vocabulary ``RCS'' is to focus on purely mathematical content (see comment B-6 for details). By the way, although Mr. Mochizuki is aware of the existence of such commentary activities based on the points raised by both men, in the ``mathematical problems'' section, it seems as if Mr. Mochizuki is completely ignoring the points raised by both men. This **a contradictory statement and is strange (comment B-5).** seems like

The only aspect of Taro Nakano's point that I can agree with in this context is that ``From the perspective of historical records for future generations, the explanatory papers Scholze-Stix report should be cited in . (Comment B-8). On the other hand, Taro Nakano criticizes this as a problem of academic integrity, saying that it is ``failing to properly cite documents''; Only those with a mathematical understanding of the content are qualified to judge (comment B-7). I agree with this in the sense that, ``Regardless of whether it is appropriate not to quote it or not, it certainly seems better to quote it as a historical document.''

At the end of the ``Academic Integrity'' section, Taro Nakano talked about the establishment of the `` Next Generation Geometry Research Center '' in 2019 (currently the `` Next Generation International Center for Geometry '', whose director is Mr. Mochizuki) as ``IUT's Criticized for ignoring the situation where its correctness is being called into question. However, based on what has been pointed out so far, what is the ``big question'' and who is ``posing'' it with solid evidence, and whether Mr. Mochizuki is really asking it? I have no doubts, including whether they are "ignoring" it (comment B-9). (This is a "summary" section, but I'm a little nervous, but just in case.) I would like to reiterate that Scholze and Stix's doubts about the IUT theory do not have a clear basis (comment A-6), and are an incomplete criticism in the first place. Even so, the Scholze-Stix report is the only one (as far as I know) that is presented in some kind of mathematical format, and many negative voices are just following it (comments A-4, A -5, A-7), and Mr. Mochizuki has also refuted the Scholze-Stix report, to which both men have withdrawn from the discussion without rebutting it (comment A-3). **Taro Nakano himself will respond to the above questions again in an academically honest manner, or that he will publicly change his position** Given that he emphasizes academic integrity so much, I hope that (Comment A-10) , Comment B-9).

as a ``recent movement'' ZEN University (applying for approval for establishment) at the Center for Interuniversal Geometry Next, Mr. Taro Nakano brings up a topic related to , one of the institute's projects

IUT Innovator Prize (see Section C). The first the paper Explicit estimates in inter-universal Teichmüller theory (projecteuclid.org) , was awarded to , which is an improved version of the IUT theory. A total of $100,000 was awarded to four people (excluding Ivan Fesenko): Yuichiro Hoshi, Shinichi Mochizuki, Arata Minamide, and Wojciech Porowski ("1st IUT Innovator Award" winning paper decided) A gift of US$100,000 from the IUGC (Interuniversal Geometry Center) | IUGC (zen-univ.jp)).
Pointing to these moves, he harshly criticizes them, calling them ``too much money" and ``It just looks like a scheme to take money from Kawango and put it in their own pockets." (Mr. Kawakami's nickname). The phrase sounds as if ``Mr. Kawakami is being conned into money by a group of evil mathematicians" (which seems natural to read), but this **an insulting remark** could be interpreted as towards Mr. Kawakami. This is unavoidable and inconsistent with Mr. Kawakami's calm and rational attitude (see comment C-3.5 for details). Regarding the prize money, it was announced at the time of the presentation that the entire amount was scheduled to be donated to the Institute for Mathematical Sciences, Kyoto University, so I feel uncomfortable with the expression ``putting it in my pocket" (comment C-5).
In addition, Taro Nakano made a harsh comment with an ironic expression, saying, ``Are these people really researchers?" It seems as if the ``Mochizuki Group" (as Taro Nakano calls it) is a group of scammers. Although he is trying to say that there is such a thing, **a delusional point that does not correspond to reality at all** it is . For example, regarding Mr. Shinichi Mochizuki and Mr. Yuichiro Hoshi, they have excellent research achievements other than IUT theory, and even recently they have published and published their research results normally (especially when they are controversial). If you do some research, you will find out that it is also accepted overseas (see comment C-4 for details). Furthermore, if the person is really a fraudster, then the purpose of the fraud is not clear at all (Comment C-4 Supplement 1), and common sense suggests that if it is a fraud, it would be better to do it better (Comment C-4). 4Supplement 2).

Based on the above, Mr. Taro Nakano said that Mr. Mochizuki (the Mochizuki group?) was ``ignoring issues of academic integrity and doing nothing but fishy things," and that ``the overseas mathematical community is clearly watching this. "It has said. I would like you to reconsider whether the actual state of Mr. Mochizuki's (Mochizuki Group's) activities is as such, taking into account the comments so far (which are explained in more detail, including the rationale, in the main text). C-7), at least as far as the overseas mathematical community is concerned, the Japanese In other words, it is poor that he bases his opinion on anonymous comments on ``5 Channel" (comment C-8). Furthermore, the description in Mr. Woit's blog and the description in the article by Mr. Taro Nakano appear to be very similar (comment C-10).

The last ``recent developments" mentioned by Taro Nakano are Joshi's series of papers (the link is to the last one) and Mochizuki's report the negative and critical responses to them in ((See section D). This section is essentially the only part of the article that contains content that I can agree with. Also, regarding the premise that there is an error in Joshi's series of papers, Scholze also points out the error (which is also cited in the article), so Nakano However, he does not seem to have any doubts.

Regarding Mr. Mochizuki's report document, Mr. Nakano specifically brought up the points that (according to Mr. Nakano), ``Mr. Mochizuki uses a lot of bold and italics to insult others," and in particular, ``ChatGPT" regarding the content of the paper. Mr. Mochizuki's assessment that the theorem number of an important part of Mr. Joshi's paper was ``9.11" was ``coincidence, or rhetoric beyond my understanding." Or is it humor?" is Mr. Mochizuki's comment.

Personally, I think it's obvious, but generally speaking, I don't think it's appropriate for content that involves ``using abusive language and belittling the other party" in an academic discussion. On the other hand, it is a matter of taste whether or not the text "uses a lot of bold and italics" (although I can imagine that some people may personally find it offensive). It has nothing to do with whether it should be considered a thing or not. It is a very harmful argument to criticize even this kind of appearance, and (I have no expert knowledge of this terminology, but in my humble opinion) it is " **tone policing** reminiscent of the term ." (Comment D-2). (Added on June 9, 2024: I think there was a big mistake in my understanding of the sentence that follows regarding “Hallucination,” so I would like to deeply apologize for the careless description. For now,

Mr. Mochizuki I am reconsidering that I should have looked for a better expression, so I would like to make a correction here. (See Addendum D-2a3 between comments D-2 and D-3) Also, I am skeptical about the IUT theory. Even if you are a person like me, I would like you to try and imagine yourself in Mr. Mochizuki's shoes, but if Mr. Joshi's paper really is ``like the hallucination of ChatGPT'' Considering the social situation, it may be necessary to point out this explicitly (please see comment D-3 for a more detailed explanation). (Added on June 9, 2024: The impression expressed in the next sentence has not changed at the moment, but I have reconsidered and reflected on the criticism of the "Hallucination" passage. Comment D-2 and (See addendum D-2a3 between D-3.) Although it is not limited to Taro Nakano, Mr. Mochizuki's point about the report is that ``Mr. Mochizuki's report goes beyond the level of phrases. behind this , such as, ``This must be an exaggeration in terms of content.'' **a weak (unconscious) imagination** It often seems that there is (Added on June 9, 2024: Regarding the next sentence, I have changed my understanding that it is likely to apply to the Hallucination passage, so I have corrected it and deeply apologize. Comments D-2 and D-3 (See Addendum D-2a3 in between.) Also, in fact (especially considering the above), from my point of view after reading the entire report, I can conclude that there is something in the report that is ``abusive and belittling the other party.'' I have to say that it is a complete mystery as to whether there is such a thing. I would like readers to take a look for themselves and judge whether it is possible to conclude that Mr. Mochizuki's report is inappropriate, ``using abusive language and belittling others.''

However, as for Mr. Nakano's criticism of the ``9.11'' story, I completely agree with him (including his point that from a Japanese perspective, why not replace it with 8.6)? I have to say that there is a serious problem with Mr. Mochizuki's description (comment D-4).

On the other hand, Mr. Mochizuki's description of ``9.11'' is strange, and I am commenting on the basic premise that I have no intention of defending it, but I have read a number of people's comments on ``9.11.'' It is a common occurrence that "correctness" is not uniform. ``In the above content, Mr. Mochizuki's words are clearly strange, and Mr. Taro Nakano's points are clearly valid.'' Therefore, Mr. Mochizuki is a strange person, Mr. Taro Nakano is a decent person, and Mr. Mochizuki is of the content of this article, which is strongly negative about the issue, is mostly or completely correct. **simplistic view** It would be really strange and unfortunate if this In particular, the statement in question here has nothing to do with the mathematical success or failure of the IUT theory (even though it is a major premise that it cannot be affirmed in itself). I think there are, but just in case) I would like to be careful again.

Now, after Mr. Taro Nakano made the above-mentioned (not necessarily valid) points including references to the ``Hallucination'' line and (valid) points including the ``9.11'' line, (2024/ 6/9 Addendum: This is my mistake, and Taro Nakano's criticism of the ``hallucination'' line is valid (see Addendum D-2a3). He critically pointed out that Mr. Mochizuki's attitude of ``mixing things in'' is ``decreasing the desire to seriously evaluate his work, and is a contributing factor to IUT being abandoned.'' While I agree with some aspects of this argument at a certain rough level, I would also like to point out that Taro Nakano's statements are extremely biased. For more details, please see comment D-5, but it is a wonder why Mr. Mochizuki can assert that he is saying things like this ``without a care in the world'' in this social situation. "Evaluation" is a word with a very heavy meaning and should not be used lightly (using such a word without making its meaning clear also causes (unconscious) confusion for the reader). Furthermore, the word ``abandoned'' is inappropriate, as it suggests that the side ignoring the IUT theory is ``better'' than Mr. Mochizuki or the IUT theory. Furthermore, on the level of human psychology, it cannot be denied that Mr. Mochizuki's radical (?) statements are a contributing factor to the negative atmosphere toward the IUT theory, but this particularly radical (?) statement is I would also like to draw your attention to the chronological order in which the social situation deteriorated significantly first, and then what happened afterwards.

Based on the above, Mr. Nakano begins his summary by once again pointing out that there is a problem with the "integrity" of Mr. Mochizuki and those around him. He says,

> Truly, there is too much dishonesty on many levels by Mr. Mochizuki and his circle

> of cronies. Averting their eyes from that, their cronies and fans say things like "IUT is amazing! Japan is amazing! It's too difficult for people overseas to understand how amazing it is!" or "We should discuss it more rather than ignore it." However, sane people can already see through it and have grown cold.
>
> " by Taro Nakano, Shibungisha Quoted from the article " Recent IUT area - tar0log (4bungi.jp) (accessed June 8, 2024)

As for ``integrity," I have already argued in this ``Summary" section. The only thing that Mr. Mochizuki has problems with is his ``phrasing", which I do not intend to downplay, but classifying it as an issue of ``integrity" does not reflect the meaning of the term. I feel something strange about the above (comment D-6).
Regarding "Japan is amazing! It's too difficult for people overseas to understand how great it is!", I have nothing special to say about the ``fans", but the ``cronies" I have never heard anyone make claims along these lines (obviously non-mathematical and inconsistent with reality). Rather, Mr. Mochizuki's thinking is that ``if we have a normal, healthy mathematical discussion, we should be able to figure it out," and the ``entourage" in the sense that Mr. Taro Nakano is referring to includes non-Japanese people. (See comment D-7 for details).
As for "we should discuss it more rather than ignore it", it is a natural argument as it is actually ignored (not just at the level of ignoring it, but in an inappropriate way once the discussion of mathematics has started).
. . On the other hand, if you don't aim for a rigorous mathematical understanding and it's just used as a topic for conversation, it's okay for people with that attitude/expertise to ignore you. (I don't know Mr. Mochizuki's opinion, but from my personal opinion) I feel that this is a normal way of thinking. (This is also my personal opinion) I feel that it would have been much better for Mr. Taro Nakano to just ignore me (comment D-8). (This in no way negates the necessity of outreach activities or the importance of getting a wide range of people interested, including non-mathematicians in general. For details, see supplementary comment D-8.)

Mr. Taro Nakano concludes his article by saying, ``Decent people can see through it and are totally cold-hearted," but the average ``decent person" feels that whether or not the IUT theory is correct (or not based on their own rigorous mathematics) In other words, we do not know (as long as it is not based on a theoretical understanding). Of course, it may be possible to end up with a negative impression after considering various things, but as I have already pointed out, in the case of Taro Nakano's article, there are many problems with the way it is argued. It would be very strange and unfortunate if more and more people were to accept the existing negative tone with little **basis and become completely cold-hearted (** comment D). -9).

(End of "Summary")

Comment (A). Regarding the “Mathematical Problems” section

First, I would like to comment on the following points. The omitted parts will be quoted later and commented on separately.

> " by Taro Nakano, Shibungisha Quoted from the article " Recent IUT area - tar0log (4bungi.jp) (accessed June 4, 2024)

Comment A-1: This is not really essential (I do not mean to point out Mr. Taro Nakano's mistake), but chronologically, the above two points are arranged in the "reverse order", and the second point states that The first point was created based on a five-day discussion held at the Institute of Mathematical Sciences, Kyoto University from March 15th to 20th, 2018 (excluding the 18th). cited This is the report document WhyABCisStillaConjecture.pdf (uni-bonn.de) by Messrs. Scholze and Stix (hereinafter referred to as the

Scholze-Stix report) that he . (A-1 end)

Comment A-1 Supplement: When I accessed the article again at 20:36 on June 8, 2024, I found that there had been a slight change in the wording of the first half of the above quotation, and it read as follows.

> " by Taro Nakano, Shibungisha Quoted from the article " Recent IUT area - tar0log (4bungi.jp) (accessed June 8, 2024)

On the other hand, the link destination is Mr. Scholze's comment (that is, as I understand it at the moment, The ABC conjecture has (still) not been proved | Persiflage (Mr. ``PS" comment on galoisrepresentations.com?) It is still a Scholze-Stix report and does not fit together (end of A-1 supplement).

Comment A-2: Based on the 5-day discussion held at the Kyoto University Institute of Mathematical Sciences, not only Messrs. Scholze and Stix, but also Mr. Mochizuki have published a report document 2018-03-ss-report.pdf (kyoto-u. ac.jp) is published. I feel that it is unfair to introduce only one of the two reports based on opposing positions regarding a discussion in a particular forum, and not even mention the existence of the other. (End of A-2)

Comment A-3: It says "will run out", but **it does not accurately reflect the situation** . This can be read as ``Mr. Mochizuki ignores the points raised and that's the end of the story," but in reality, **Mr. Mochizuki considers the content of the points raised and makes a detailed rebuttal, and ignores the points raised. It is not Mr. Mochizuki, but rather Mr. Scholze and Mr. Stix, who (in effect) reject the discussion** . (For the record, I am not here to argue whether it is right or wrong that Messrs. Scholze and Stix ignore Mr. Mochizuki's objections, but simply that the situation is as it is.)
I will explain this in more detail below.

> > Moreover, it does not necessarily appear realistic to expect that
> > further substantial efforts of the sort just described will be made by the
> > authors of these files [SS2018-05], [SS2018-08] in the immediate future.
>
> Quoted from the web page by Shinichi Mochizuki, March 2018 Discussions on IUTeich (kyoto-u.ac.jp) (accessed June 4, 2024)

> > Already four years have elapsed since our discussions in March 2018 and the
> > subsequent release of your 10pp. manuscript in May/August 2018.
>
> Document written by Shinichi Mochizuki about the contents of the email sent by him, quoted from reopen-e-mail-2022-06-30.pdf (kyoto-u.ac.jp) (accessed June 4, 2024)

The description

> > In our final e-mail correspondence in August 2018, I took the position that I do not
> > wish to exert pressure on you (or Peter Scholze) to continue discussions concerning
> > IUT if you are not interested in doing so. On the other hand, the fact that your 10pp.
> > manuscript does not contain detailed, rigorously formulated statements and proofs of
> > the key assertions cannot be ignored and … (後略) …
>
> Quoted from a document written by Shinichi Mochizuki about the contents of the email sent by him, reopen-e-mail-2022-06-30.pdf (kyoto-u.ac.jp) (accessed June 4, 2024)

There is a description:

An example of a document sent by someone other than the person himself, where the situation can be directly

read, is the Twitter (currently X) of Mr. Fumimoto Kato (Professor Emeritus of Tokyo Institute of Technology, Director of IUGC). Although the name has been withheld, the description reflects the real-time situation.

> What I'm angry about now. ...(snip)... Why does Mr. S still continue to withhold the release of the documents that he and Mochizuki jointly prepared with the aim of making them public (contrary to his initial promise)?

Quoted from Fumiharu Kato's Twitter (currently X) post, https://x.com/FumiharuKato/status/1025582782754344960 (accessed June 4, 2024)

> They are angry at the recklessness of initially rushing the document because they wanted to publish it right away, but then suddenly and unilaterally forbidding its publication once the documents were ready.

Quoted from Fumiharu Kato's Twitter (currently X) post, https://x.com/FumiharuKato/status/1025882631462768640 (accessed June 4, 2024)

> This text was completed in the early summer of 2018, but at the request of Scholze-Stix, it was not published until September (the URL above has been modified further).). However, in response to this, Scholze-Stix further promised an answer.

Quoted from Fumiharu Kato's Twitter (currently X) post, https://x.com/FumiharuKato/status/1198512622078808066 (accessed June 4, 2024)

> In September of last year, I unilaterally withdrew from this matter without giving any answers. In that sense, it is Scholze-Stix who has not provided an answer, and Mr. Mochizuki has provided a proper answer. (Of course, I think the Scholze-Stix side had some thoughts on their decision to leave, so we are not particularly evacuating.)

Quoted from Fumiharu Kato's Twitter (currently X) post, https://x.com/FumiharuKato/status/1198512770821439489 (accessed June 4, 2024)

It is. In any case, **Scholze and Stix, not Mr. Mochizuki, who are ignoring the points and refusing to discuss them.** it is clear from these statements that it is Messrs. (End of A-3)

Supplementary Note 1 to Comment A-3: As we will see later, Taro Nakano is a member of not only Shinichi Mochizuki himself, but also Fumimoto Kato (to put it in his own words, the ``Mochizuki Group''). It seems that they are also making a judgment that they cannot trust the IUT faction. No matter how negative your stance is on the "Mochizuki Group" or "IUT faction," I don't think there is any reason to suspect distortions or fabrications even in the circumstances that can be easily and objectively proven or disproved, such as those mentioned above. However, just to be sure, I would like to point out the following: Although the fact that Messrs. Scholze and Stix have actively promoted the fact that they have "unilaterally withdrawn from the discussion" may not have been intentionally concealed, Therefore, **the sources of information regarding this process are biased toward the "IUT faction."** it is natural that (A-3 Supplement 1 end)

Supplementary note 2 to comment A-3: I will preface here what is detailed in supplementary 1 to comment A-6, but regarding the specific content of Messrs. Scholze and Stix's points, it is important to note that they are not mathematical details. Apart from the affirmation or denial of the IUT theory, you can also see that it lacks by actually looking at it. (End of A-3 Supplement 2)

Next, I will move on to comments on the omitted parts from earlier.

> Around the same time, several other mathematicians independently pointed out that there is a logic gap in Corollary 3.12 on overseas mathematicians' websites and in email discussions (cf. Aberdein 2022 , Table 1).

" by Taro Nakano, Shibungisha Quoted from the article " Recent IUT area - tar0log (4bungi.jp) (accessed June 4, 2024)

Comment A-4: From the referenced table, I could not read the names of the ``mathematicians who pointed out the gaps in the logic of IUT theory" other than Messrs. Scholze and Stix. (Are you referring to the e-mail that Brian Corad received? If so, it seems like an unclear and inappropriate reference.)
Of course, I am aware that there are many other "deniers" (at least on the internet overseas). However, my subjective impression at this point is that out of the many ``deniers", the ``deniers" were reached after truly examining the mathematical content, and the ``deniers" It seems that there are very few people who have attempted to properly present the rationale for this, apart from Messrs. Scholze and Stix (whose argument was refuted by Mr. Shinichi Mochizuki himself and who has not responded to it). (Actually, I don't know, and **if there really is a ``mathematical basis for the denial'' written by a mathematician in any document other than the Scholze-Stix report, which has already been refuted, please let me know** .) (end of A-4)

Supplementary note regarding comment A-4: **An example of one of the few "deniers who tried to present mathematical evidence appropriately" is Emmanuel, who later realized his own misunderstanding and changed his position to a "positive advocate." Mr. Lepage is mentioned** . Mr. Mochizuki's August 2023 report 2023-08 Brief report on the current situation surrounding inter-universal Teichmuller theory (IUT).pdf (kyoto-u.ac.jp) The circumstances surrounding Mr. Lepage are also described in . .

> At the outset of these discussions (in the summer of 2017), Lepage took a deeply skeptical position with regard to the mathematical validity of IUT. On the other hand, it was precisely as a result of his sincere efforts during the period 2017 - 2021 to respond to repeated requests by the author of IUT to make his objections to the mathematical validity of IUT precise and explicit that Lepage was finally able to realize and acknowledge explicitly that his objections to IUT were purely psychological, that he had misunderstood IUT, and that he no longer had any mathematical reasons not to acknowledge the mathematical validity of IUT.

望月新一氏による報告文書， 2023-08 Brief report on the current situation surrounding inter-universal Teichmuller theory (IUT).pdf (kyoto-u.ac.jp) (2024年6月4日アクセス) より引用

この記述に関しては特に，是非読み飛ばすことなく目を通して頂きたい.

（A-4補足終わり）

次の内容に移る.

> 欧州数学会他が運営する世界的な数学文献データベース「zbMATH Open」でも、望月論文にはScholzeによるレビューが付いており、ABC予想を証明したという論文の主張は明白に否定されている。これに代表されるように、望月グループの外では望月論文は否定的に受け止められている。

しぶんぎ社，中野太郎氏による記事「 最近の IUT 界隈 - tar0log (4bungi.jp) 」（2024年6月4日アクセス）より引用

Comment A-5: The substantive content of the first sentence is that "Scholze denies it," so it is included in the previous sentences (no substantive new content can be found in the first sentence) . . Furthermore, the Mochizuki paper has a review by Professor Mohamed Saidi in ``Mathematical Reviews", which is run by the American mathematical community, and the paper's claims are clearly affirmed. Whether Mr. Saidi affirms it or Mr. Scholze denies it, **``that's what someone said'' has at most an impact on one's mental beliefs, and cannot be used as a basis for making a conclusion in the context of mathematics. this should not be** It is a matter of course that the case. This is the same in the proof of Weil's conjecture by Deligne et al. and the proof of Fermat's Last Theorem by Wiles et al., which are no longer suspected by anyone. (End of A-5)

Comment A-6 (continuation of A-5): As a ``rebuttal" to the ``assumed refutation" of A-5, this is a bit off from the purpose of commenting on Taro Nakano's article, but the following: I would like to leave a comment. Of course, the situation in which the proof of Weil's conjecture by Deligne et al. and the proof of Fermat's last theorem by Wiles et al. (though very few people have actually followed it) are widely accepted is different from the situation in which ``most people have no idea what to do at all." I also understand that this does not mean that I believe it without evidence. In a situation where there are only a few people who fully understand the proof and have absolute certainty (well, I think there are still a lot more people than IUT theory), it is still important to reach consensus. One important aspect is that intermediate students can understand the story of the proof and the motivation behind the method mathematically, even if they do not fully understand it. I think that there are gradation-like stages of understanding, and many people participate in the intermediate areas.

IUT theory is based on a relatively niche and unique field of arithmetic geometry, called far-Abelian geometry (an area whose style is particularly close to Mochizuki's). Therefore, in order to participate in this intermediate field (assuming the theory is correct), it is necessary to have a certain level of understanding of the issues and methods of far-Abelian geometry (particularly the field whose style is close to Mr. Mochizuki's). . . In fact, among the people I interact with on a regular basis, including myself, based on this understanding, even if they have not reached a strict understanding of IUT theory, they can still understand the story and general logical structure. As a result, there is a shared atmosphere of accepting the theory positively. Also, based on this understanding, there is a shared feeling that the Scholze-Stix report on IUT theory is probably wrong.
Even if you have a positive belief based on a certain mathematical basis, **unless you have a definitive conviction (based on your own mathematical understanding), you can say, ``The IUT theory must be correct'' or ``Scholze- the fact that I do not publicly make conclusive statements such as "The Stix report must be wrong" is a matter of common sense as a mathematician** I believe that . Personally, I originally wanted to avoid even making public an assertion that the Scholze-Stix report is probably wrong, no matter how much I had reservations about it. . . Of course, this does not change whether it is confirmed or denied, and if **there is a current situation where the voices of those who adhere to common sense are less likely to be heard than those who do not. If so, that would be extremely unfortunate (even if the IUT theory were wrong, independent of it)** . (A-6 end)

Supplementary note regarding comment A-6: This is still a bit off the point of commenting on Taro Nakano's article, but there is something I would like to explain here.
In mathematics, it is said that although it is difficult to confirm and point out that something is correct, it is easy to confirm and point out that something is wrong (I don't think it is a universal principle, but it is based on experience. There is a tendency for Because of this tendency, ``If you think the Scholze-Stix report is probably wrong, why not read it carefully and see if it really is wrong? Isn't it strange to leave it alone?" However, I would like to explain here that this observation does not apply to the Scholze-Stix report. This is due to the following reasons. This is because the Scholze-Stix report WhyABCisStillaConjecture.pdf (uni-bonn.de) describes

To facilitate the discussion, we will describe (only) the notions that are strictly

> relevant to explain what we regard as the error. This will involve certain radical simplifications, … (後略) …

Quoted from the report by Peter Scholze and Jacob Stix, WhyABCisStillaConjecture.pdf (uni-bonn.de) (accessed June 4, 2024)

As can be seen from the following, the Scholze-Stix report has the following logical structure. (*Roughly speaking, the following part of the above quotation describes doubts that can be assumed in advance regarding such simplification, and ``excuse'' against them.In particular, Mochizuki It is stated that there are both simplifications that are agreed upon and simplifications that are not.

Logical structure of Scholze-Stix reports:

- A major simplification is made to the IUT theory.
- We point out that the simplified IUT theory (and therefore, in particular, the simplified version of Main Theorem III.3.11) is meaningless.
- Explain that the proof of Corollary III.3.12 (the argument that derives Corollary III.3.12 from the main theorem III.3.11) is incorrect.

The important aspect of Mr. Mochizuki's rebuttal (including the content that was included in the Scholze-Stix report that ``we agreed with Mochizuki on this simplification'') is the first point in the bullet point above. This means that the ``simplification'' (of ``Simplification'') contains many parts that we cannot agree on/do not agree on, and that ``simplification'' is wrong. regarding the discussions in March 2018 Mr. Mochizuki's report document 2018-03-ss-report.pdf (kyoto-u.ac.jp) contains the following statement.

> Indeed, at numerous points in the March discussions, I was often tempted to issue a response of the following form to various assertions of SS (but typically refrained from doing so!):
> Yes! Yes! Of course, I completely agree that the theory that you are discussing is completely absurd and meaningless, but that theory is completely different from IUTch!

Quoted from the report document by Shinichi Mochizuki, 2018-03-ss-report.pdf (kyoto-u.ac.jp) (accessed June 4, 2024)

Returning to the original question, ``Why don't I (for example, myself, the author of this article, Reiya Tachihara) check whether the Scholze-Stix report is incorrect or not?'' Whether a certain simplification can be made can only be determined after fully understanding the content of the theory. Therefore, in order to rigorously verify the content of the Scholze-Stix report, we must first aim for a full-fledged understanding of the mathematical content of the original paper on IUT theory. And that's exactly what I'm currently working on (though it's still going to take a long time due to various other mathematical activities). (End of A-6 Supplement 1)

Supplementary note 2 regarding comment A-6 (from the 3rd paragraph onwards, it is for people who have specialized knowledge of number theory at the master's level?): I will continue to stray from the purpose of this article, but this time I will explain why I explained the above. Despite such "subtlety", do you even think that it is "probably wrong"? Let me say a little bit about this question. Furthermore, as I mentioned earlier, I am reluctant to state this claim publicly at the moment (from the perspective of academic integrity!), so I do not want to emphasize it too much. It is easy to imagine that this kind of doubt/distrust arises in the context, which is why we include the phrase ``crying and crying.''

In very rough, non-mathematical terms, as mentioned in comment A-6, even if we don't fully understand it, at a rough level we can understand the story of the proof and the motivation behind the method. I have an intermediate understanding of IUT theory, such as "I have a clear mathematical understanding of the I have a feeling that Stix's report is probably wrong. Also, from that perspective, I feel that Mr. Mochizuki's rebuttal to the Scholze-Stix report is very valid.

At a slightly more mathematical (but still very rough level due to realistic character/time constraints) knowledge of number theory (local class field theory) at master's level (?), I would like to explain this ``intermediate understanding" in my own words and based on my own responsibility. I would like to repeat this just in case, at the time of writing this article, I am still in the process of studying this theory, so please treat it as just one reference (however, I am not satisfied with the general explanations related to far-Abelian geometry). (confident).
The premise is that in far-Abelian geometry, we want to treat arithmetic geometry in a ``(topological) group theoretic" manner, so we temporarily forget various objects that are usually defined in ``ring theoretic", or It is necessary to temporarily release the natural identification between the two.
Let's explain with a concrete example. The absolute Galois group G_k of a p-adic local field k has a natural subgroup I_k called the "inertia group" (corresponding to the maximum unbranching extension of k, especially the Zhat extension) due to its ring theoretic origin. The definition is not topological group theoretic. In other words, for G_k, a subgroup I_k is determined, but for a simple topological group G that is isomorphic to G_k, there is no definition of a subgroup corresponding to I_k a priori. (This non-existence means that, for example, the conservation issue of "whether the topological group isomorphism between G_k1 and G_k2 leads to isomorphism between I_k1 and I_k2" is not clear.) If you try to express it in a short and catchy phrase, you'll end up with a (seemingly strange?) catchphrase such as ``Since the ring theoretic interpretation of G_k is forgotten, I_k will also be forgotten along with it." (Note that this motto is not a phrase used by Mr. Mochizuki and others, but is a phrase I thought of as I was writing it, but if you are familiar with far-Abelian geometry, which is a similar style, you can easily understand such mottos without any problems. , I have the impression that it is sometimes criticized as meaningless.) Of course, there is an easy method of ``fixing one isomorphism between G and G_k and using that to transfer I_k." However, since it may depend on how k is taken and how isomorphisms are taken, it cannot be said to be an appropriate definition determined only from G (see the conservation issue above). This is very similar to how in manifold theory, the definition of a concept must not depend on its coordinates (even when we are dealing with a manifold that is isomorphic to an open set in Euclidean space).
Therefore, ``more generally than G_k, for a topological group G such that ``some p-adic local field k exists and is isomorphic to G_k", some subgroup I(G) is defined well-defined and topological group isomorphism invariant. , such that it satisfies I(G_k)=I_k for any p-adic local field k (in other words, in the analogy of manifold theory, it is a ``definition independent of coordinates"). If it can be established, then of course **it becomes a mathematical theorem that contains non-trivial content (for example, the above-mentioned conservation) (even though it is ``just a definition'')** . Of course, non-obviousness is packed into thinking about how to define it, checking its well-definedness, and consistency with conventional definitions. This is the idea of ``restoration" that lies at the heart of far-Abelian geometry. In fact, ``I_k" can be ``restored" as a relatively simple application of local class field theory (that is, an appropriate definition of ``I(G)" can be found), so It would be a good idea to first read the following discussion and then think about it.

In addition, G_k has a natural effect on the algebraic closure kbar of fixed k (used to define G_k), and these effects also naturally apply to the topological group G that is isomorphic to G_k. is not determined a priori. On the contrary, for such an abstract topological group G, it is unclear what ``kbar" refers to. Furthermore, even if we give a certain appropriate interpretation (which will not be explained here), we can show that it cannot be ``restored" under that interpretation. On the other hand, if we use a commutative monoid called the multiplicative group of kbar (*it is actually a group, but we will call it a monoid considering the various variants of the problem), it is possible to restore its "étal version", which will be explained below. Yes, and the action from G can also be restored. This is the ``restoration of the etard representation" of kbar (the action

of G_k on).
Let me explain. First, if I_k can be reconstructed, then as its Sylow p-subgroup (note that this characterization is topological group theory!), the inertia group P_k can be reconstructed (that is, the ``I(G)" ``P(G)" can be properly defined by adjusting the symbology). Therefore, by appropriately observing the natural effect of G_k/I_k on I_k/P_k, Frobenius in G_k/I_k can actually be reconstructed topologically. The resulting subgroup of G_k/I_k (= so to speak, the part corresponding to Z in Zhat, originally not topological group theory, but now topological group theory!) is transformed from the abelianization of G_k to G_k/I_k by natural By pulling back through surjection (topological group theoretic!), we obtain "the multiplicative group of k embedded in the abelianization of G_k through the reciprocal mapping of local class field theory" (originally clearly ring theoretic/non-topological group theoretic!) can now be reconstructed topologically. Finally, by applying this topological group theoretic construction to various open normal subgroups of G_k, taking the inductive limit that shrinks the open normal subgroup (by Transfer), and considering the conjugate action of G_k, we can calculate the value of kbar. It is possible to recover an object that is naturally isomorphic to the multiplicative group, and an action of G_k on that object that is compatible with this natural isomorphism.

(Very detailed detour) If we originally fix one prime number p and consider restoration starting from a topological group G that is ``a certain p-adic local field k that is isomorphic to G_k", then the above The reconstruction of P(G) is appropriate as it is, but on the other hand, if there exists a certain prime number p and a certain p-adic local field k with respect to that p, then the reconstruction starting from the topological group G that is isomorphic to G_k can be done. If so, the reconstruction of P(G) above is incomplete (the choice of ``p" is not topological group-theoretical!). This gap can be resolved by restoring ``p" in advance (this can be done by simply observing the topological group theoretic structure of the abelianization of G using local class field theory).

Now, let's return to the topic of specific examples of restoration. I wrote that it is "naturally isomorphic to the multiplicative group of kbar," but this "natural isomorphism" is "ring theoretic." What do you mean? Let us write the isomorphism of the multiplicative group of kbar (the etard representation of kbar) obtained as the output of the above reconstruction as MultGp_AlgClFld(G), where G is the input topological group. (I would like to give the action of G a symbol such as Act(G), but I will omit it for now.) There is a "natural isomorphism" between the multiplicative group of MultGp_AlgClFld(G_k) and kbar, but of course , which is defined using the ring structure of k (by local class field theory), and in that sense is ring theoretic. Therefore, a new restoration problem arises, which is to redefine this in terms of topological group theory and multiplicative monoid theory. Its formulation is as follows.

Problem: Let (G, M, rho) be a topological group, a commutative monoid, and a set of actions of the former on the latter. Suppose that such a set is isomorphic with the natural action that arises from its composition. In this case, using this (G, M, rho) as a starting point, can we restore the isomorphism between MultGp_AlgClFld(G) and M, which corresponds to the above-mentioned "natural isomorphism" (and is therefore compatible with the G action)?
(*Actually, in this case, it can be shown in a very elementary way that ``at least, it cannot be completely restored" without any specialized knowledge of far-Abelian geometry, but can you imagine that?)

This is a classic example of the ``Kummer isomorphism restoration" problem. MultGp_AlgClFld(G) is called an Etalian object, whereas M is called a Frobenian object. ``Frobenian objects as objects of primitive interest that originally exist as ``substantive"" and ``more mysterious and mysterious ``magical" objects, but purely topological The reconstruction of the Kummer isomorphism, which canonically connects the ``étal objects that are highly compatible with the ``, plays a very important role in IUT theory. For answers to the above-mentioned problem examples regarding the restoration of Kummer isomorphism, non-trivial consequences derived therefrom, and detailed explanations of other related matters, please refer to Yuichiro Hoshi's excellent paper Introduction to Mono-anabelian. Geometry (centre-mersenne.org) (especially Summary 7.5, but Lemma 1.4 regarding the gap between "group" and "topological group"). Please refer to

What I would like to emphasize here again is that **if we consider the topological group theory/monoid theory setting in which ring structures are forgotten, the definitions and identifications of various objects that were commonplace in ring theory no longer become commonplace** . Therefore, the non-trivial problems of ``restoring the Étardian representation" and ``restoring the Kummer isomorphism" arise. From the above point of view, the main theorem III.3.11 of IUT theory (the content is much more complex, and what is important mathematically is that it is essentially a global situation rather than a local situation as described above). (Although it is a typical setting) As you can see, it is written in this way. In other words, **the setting of a weaker structure that forgets the ring structure** (of Ethard representation and Kummer isomorphism) concerning objects originally derived from ring structures can be solved from **non-trivial restoration problems** it is written in such a way that . The theta-link compatibility of the theorem means that the reconstruction problem is solved in such an acyclic setting (weaker structure, such as Galois group or multiplicative monoid), so it is possible to solve problems that cannot arise from a ring structure. It can be understood as a direction in which various (originally ring-theoretical objects, concepts, etc.) become compatible with non-conventional isomorphisms related to ``weak structures" that lead to ``transformation of value groups". . . Furthermore, in the reconstruction of the Etard representation and the Kummer isomorphism, there are descriptions that take into account directional content such as compatibility with volume calculations. As a result, for very non-obvious reasons (!), the left and right sides of the theta link (especially ``theta = q^N" and ``q"), which should be distinguished (!) , it becomes possible to consistently ``confusion" including contents related to ``volume calculation", and non-trivial inequality-like consequences can be obtained from this (taking into consideration the concept of ``indeterminacy", which is not explained here). ” is not strange at all.

On the other hand, the Scholze-Stix report states that Main Theorem III.3.11 "becomes obvious rather than false" under their proposed simplification:

> We pause to observe that with the simplifications outlined above, such as identifying identical copies of objects along the identity, the critical [IUTT-3, Theorem 3.11] does not become false, but trivial.

Quoted from the report by Peter Scholze and Jacob Stix, WhyABCisStillaConjecture.pdf (uni-bonn.de) (accessed June 5, 2024)

Operations such as identical copies of objects identifying along the identity are a natural and obvious concept that should not cause any problems in themselves. On the other hand, however, **even if a certain operation itself is completely natural and should not cause any contradiction, whether there is no problem with performing it and another operation at the same time is another matter. natural that its harmfulness/ harmlessness depends on the mathematical context under consideration** , Therefore, it is . In the context of far-Abelian geometry, in a context where we want to treat a structure that is truly weaker than a ring structure (= in the context of the reconstruction problem as above), we can treat G_k, which we want to treat as an abstract topological group (in the ring theory context).) as the Galois group G_k, which can lead to unnecessary confusion that has essentially negative effects on the theory. Also, although it may seem more obvious at first glance, but is actually related, when we want to consider the identification/gluing of two objects by a morphism other than ``id", we can simultaneously Identification through `id" is a self-contradictory way of thinking to begin with. Mr. Mochizuki's lecture slides IUT as an Anabelian Gateway (IUGC2024 version).pdf (kyoto-u.ac.jp) (Please refer to , especially sections 2 and 3. Also, please refer to the short and excellent explanation by Mr. Tsuyoshi Yamashita 2018 Mr. Yamashita's FAQ.pdf (kyoto-u.ac.jp) . -09-03 Please also see

If the content of the main theorem is not misunderstood due to unnecessary confusion of direction, it is hard to imagine how such a restoration theorem could be ``obvious". (I have not reflected all of my understanding in the description here, but generally speaking) For this reason, if you think about it with common sense, the

assertion of Theorem III.3.11 can be interpreted as a Scholze- My current thinking (imagination) is that it is more consistent to think that Stix is misunderstanding this.

Again, this statement, ``From a common sense point of view, it is more consistent to think that Scholze-Stix misunderstood" (even though this is based on his own knowledge of far-Abelian geometry). It is with great reluctance that I have come to publicly state my ``tentative understanding" (which cannot be said to be 100% based on a rigorous mathematical understanding of the content of the original paper or report). **I have been careful to avoid making definitive statements about the success or failure of mathematical content that I do not have a 100% precise understanding of, as it is inappropriate to do so** . The point is that it is not even the intention to make claims that suggest judgments about success or failure. (End of A-6 Supplement 2)

A-6 Supplement 3: Again (see Comment A-6 Supplement 2), in the restorative argument in far-Abelian geometry, ``even if the proof of a theorem is very short, The theorem becomes very non-trivial (because the various definitions contain non-trivial content), which can be said as a general principle. Regarding this, you **may be wondering, ``How could Mr. Scholze not understand such a simple thing?'' I completely sympathize with that question** . Mr. Mochizuki also said in an article on his own blog:

> Even Western mathematicians who were skeptical about the theory would be able to eliminate their misunderstandings and doubts about the theory (as Riemann Weierstrass famously said in the 19th century) if they were given constructive mathematical discussion. (It is very similar to the controversy surrounding analytic continuation) From the perspective of modern mathematics, it is quite elementary and can be easily dispelled, and... (Strategy)...

Shinichi Mochizuki's blog article, Western deification based on Christianity and Judaism, the ideology of the chosen people, and the suppression of reason | Shinichi's "Vote of the Heart" - Rakuten Blog (rakuten.co.jp) (June 2024 Quoted from (accessed on 7th May)

It has said. Considering the above, famous English article Titans of Mathematics Clash Over Epic Proof of ABC Conjecture | Quanta Magazine looking at Mr. Scholze's understanding and attitude towards IUT theory as explained in the , there are some very interesting suggestions. In any case, I am not qualified to state anything conclusively at this point, so I do not intend to write down the contents of that "suggestion" here, but readers with specialized knowledge of mathematics may be interested in the above. Please refer to the explanation and the quotation below to imagine for yourself what is going on.

> Scholze was one of the paper’s early readers. Known for his ability to absorb mathematics quickly and deeply, he got further than many number theorists, completing what he called a “rough reading” of the four main papers shortly after they came out. Scholze was bemused by the long theorems with their short proofs, which struck him as valid but insubstantial. In the two middle papers, he later wrote , “very little seems to happen.”

Quoted from Titans of Mathematics Clash Over Epic Proof of ABC Conjecture | Quanta Magazine (accessed June 6, 2024)

Furthermore, the assertion of the main theorem III.3.11 of IUT theory is not only complicated in terminology and concepts, but also in far-Abelian geometry (especially algorithm It uses expressions that would be difficult to understand accurately without specialized academic experience in Abelian geometry, and moreover, even experts have used expressions that are difficult to understand without specialized academic experience in Abelian geometry. I would like to add that it seems that it is possible to ``truly and accurately grasp" the meaning only by carefully reading the whole part, and that this cannot be said to be a flaw on the author's part, considering the content of the theory and the point of view. I want to go. (A-6 Supplement 3

end)

Since the comment has become too long, I will quote the same part from Taro Nakano's article again.

> In zbMATH Open, a global mathematical literature database run by the European Mathematical Society and others, the Mochizuki paper has a review by Scholze, which clearly refutes the paper's claim that it has proven the ABC conjecture. As exemplified by this, the Mochizuki paper has been received negatively outside the Mochizuki group.

" by Taro Nakano, Shibungisha Quoted from the article " Recent IUT area - tar0log (4bungi.jp) (accessed June 4, 2024)

Comment A-7: The scope of the term ``Mochizuki Group" is ambiguous, and this point does not seem to have any particular meaning.
If the content of the paper is highly specialized (this is true not only for IUT theory but also for various theories that no one has particularly questioned), it is necessary to have a high level of expertise in that field. It goes without saying that you won't be able to understand it without it. This is especially true since IUT theory is based on the relatively niche and unique field of far-Abelian geometry (which is similar to Mochizuki's style).
If "outside the Mochizuki group" means "other than experts in far-Abelian geometry (who are close in style to Mr. Mochizuki)," then most of them (as noted in comment A-6) Most of them, therefore, simply do not have any mathematical basis for being convinced of their ``negative" position (from the point of view of the obvious principle that ``you cannot conclude anything unless you know it well"). This means that they are simply following the already existing negative atmosphere/negative statements. This does not provide a basis for further denial beyond the ``original epicenter" (as I understand it, the important one is the Scholze-Stix report) of the negative atmosphere. **It is a strange kind of circular reasoning to consider the negative atmosphere itself as the basis for further negation beyond the ``original epicenter'' of the negative atmosphere.**
Or, if you mean something along the lines of ``IUT theory is perceived negatively by people other than the (very few?) people who have a positive attitude," then this is also almost meaningless circular reasoning. appear. Or (if we accept this interpretation favorably so as to avoid "circular reasoning") does it mean "less neutral"? I don't know if there are really "few neutrals," but if there are "few neutrals," then if we take into account the reason why there are "few neutrals," that would really make a difference to the mathematical success or failure of the IUT theory. Why not think again about whether there is a connection? (End of A-7)

Supplementary note regarding comment A-7: Regarding the "following" line, of course, the reality is that each person has their own specialized field and job, and there are only a limited number of people who can devote time to studying and verifying IUT theory. Therefore, I do not intend to make ``following" itself a problem. I think that their belief that the proof of the abc conjecture is flawed is roughly the same as my belief that Fermat's Last Theorem has been proven. On the other hand, if such followers categorically express a negative position regarding the success or failure of the IUT theory in public, this is far from common sense as a mathematician and should be considered academically unacceptable. It is hard to say that this is a sincere attitude.
Also, (although I don't actually know, one naturally imaginable possibility) if what Scholze (a superstar in the arithmetic geometry world) said is ``absolutely correct." If this is the case, and many people follow suit without properly examining it, Scholze would not want to see such a situation. If such an unhealthy social situation exists, I feel that Mr. Scholze has a lot to do with being a pitiful victim. (End of A-7 supplement)

Comment A-8 (at the end of Section A): Based on the above comments, I would like you to tell me again what you mean by "mathematical problems". If possible, I would like to say, ``As long as I am discussing mathematical issues, I would like to base my discussion on Mr. Taro Nakano's own mathematical

understanding," but I understand that this is a harsh request. So, even if you made the decision based on some social factors (although that in itself can't be helped), I would like Mr. Taro Nakano to clearly explain what his understanding was and how he made the decision. Also, I think this is obvious, but if you have changed your mind after reading the comments above, please express it appropriately. (A-8 end)

Comment (B). Regarding the “Academic Integrity Issues” section.

In the article, Mr. Taro Nakano points out ``issues of academic integrity" in bullet points, so I will quote each of them to make his points.

> Mr. Mochizuki did not cite Scholze and Stix's points in his paper at all, and the review team did not ask them to cite their points in the paper, so they accepted the paper in 2020, completely ignoring the points made by Scholze and Stix. , was published in 2021.

" by Taro Nakano, Shibungisha Quoted from the article " Recent IUT area - tar0log (4bungi.jp) (accessed June 5, 2024)

Comment B-1: In the first place, it is impossible to judge whether Scholze and Stix's points should be cited in the paper or not without an appropriate mathematical understanding of the content of the theory and the content of the points made. It is. If your argument is that you should quote something because a great mathematician has pointed it out, then that is far from an academic attitude. (End of B-1)

Supplementary note regarding comment B-1: I don't want to appear on the same level, but if I dare to talk about social evaluation, I would say that in far-Abelian geometry, the academic field on which IUT theory is based, It is a normal, objective social evaluation that there is no teacher who is ``greater" than Shinichi Mochizuki. (End of B-1 supplement)

Comment B-2: As already pointed out in detail in Comment A-3, Mr. Mochizuki did not dismiss the points raised by both men as ``never happened," but rather prepared a rebuttal document that carefully addressed them. , Messrs. Scholze and Stix are the ones who dismiss that objection. (End of B-2)

> The journal in which the paper was published is PRIMS , a journal of the Institute of Mathematical Sciences, Kyoto University, to which Mr. Mochizuki belongs , and Mr. Mochizuki himself serves as the editor-in-chief of this magazine. In other words, it was submitted to an internal magazine, peer-reviewed by Mochizuki's associates, and passed, making it essentially a self-produced work. (Mr. Mochizuki himself is said to be no longer in charge of editing this paper, but it would be normal to think that there is no way that the review team would not take this into account.)

" by Taro Nakano, Shibungisha Quoted from the article " Recent IUT area - tar0log (4bungi.jp) (accessed June 5, 2024)

Comment B-3: I also feel that it is not a good idea for such a controversial paper to be published in a journal in which the author serves as the editor-in-chief (generally speaking, regardless of this case). I understand, and I have no intention of denying it. On the other hand, it is clear that at the time of submitting the paper, the situation was normal and there was no major controversy like this, and that it was extremely normal for Mr. Mochizuki to submit to PRIMS, especially under such normal circumstances. I would like to point out one thing. (End of B-3)

コメントB-4: 「望月氏のお仲間が査読し、通すという実質的な自作自演」「査読チームが忖度しないわけがないと考えるのが普通」とあるが，これは論文著者の望月氏のみならず，**柏原正樹氏を**

含め，編集に携わった，IUT理論とは特に関係なく大変に優れた実績をお持ちの数学者たちに対する，根本的な侮辱的発言である．ご自覚はおありなのだろうか．これは（まさに，中野太郎氏ご本人による項目分けからもわかる通り）**数学的正しさに関する否定的言及とも全くレベルが違うものであり，非常に重大な冒涜**である．（たとえIUT理論の成否に対して懐疑的な数学者であっても，このコメントには怒ってみても良いように思う．）

Furthermore, let us suppose (hypothetically!) that such ``supposition'' itself is somewhat possible. Even if this is the case, I would like to add that it is difficult to think that ``publishing without reflecting Scholze and Stix's report'' itself is a result of ``surreptitiousness''. This is because, as I already indicated in the middle of Supplement 2 regarding comment A-6 (*There is a subjective part in Supplement 2 to A-6, but this part can be judged objectively), if Scholze -If the points in the Stix report are correct, the IUT theory would be ``a theory that is completely meaningless and has no substantive content.'' And even if there were something like ``surprise'', **it would seem that a ``totally meaningless theory with no substantive content'' would be agreed to be published based on simple ``surprise'' despite its meaninglessness. extremely difficult to think of this in common sense** This is because it is . (End of B-4)

> In addition to the main IUT papers, Mr. Mochizuki publishes IUT-related reports and papers on his website from time to time, but he consistently does not mention the names of Scholze and Stix in these documents. The school continues to be referred to by the derisive name ``RCS (redundant copies school),'' and their reports are not cited in the bibliography. For example this . Failure to properly cite documents means that future generations will not be able to trace such discussions from bibliographic information.

Shibungisha, article by Taro Nakano “ Recent IUT area - tar0log (4bungi.jp) ” (accessed June 5, 2024)

Comment B-5: I was very surprised when I first saw this part. Although you are aware of these contents, why do you also know that, as pointed out in comment A-3, ``Mr. Mochizuki is responding to criticism, and it is Mr. Scholze and Mr. Stix who are refusing to discuss it?'' It feels like a contradictory statement and makes me wonder if there isn't one.
Or, an attitude of believing in a biased information source with a ``conclusive'' attitude, or ``the content of Messrs. Scholze and Stix's points are correct, but the content of Mr. Mochizuki's response is a mess,'' or a person with rigorous expertise in mathematics. Did he intentionally ignore Mr. Mochizuki's response in the ``Problems as Mathematics'' section by adopting an interpretation that is impossible in principle to arrive at without at least one of them? (End of B-5)

Comment B-6: I cannot see any element of ridicule in the naming of RCS=redundant copies school. Redundant copies is simply his summary name for the directional mathematical assertions (misconceptions) made by Messrs. Scholze and Stix, and since it expresses purely mathematical content, there is an element of ridicule. There's no way it can happen. Also, school doesn't seem to be a particularly derisive word (if anything, maybe it's my lack of English skills?). The fact that RCS is a vocabulary that was introduced purely to focus on the mathematical content of misunderstandings `` this is clearly stated in the explanatory paper that Taro Nakano also cites as ." It is.

> One fundamental reason for the use of this term “RCS” [i.e., “redundant copies school [of thought]”] in the present paper, as opposed to proper names of mathematicians, is to emphasize the importance of concentrating on mathematical content, as opposed to non-mathematical — i.e., such as social, political, or psychological — aspects or interpretations of the situation.

> 望月新一氏による解説論文， ess-lgc-iut-amstex.pdf (kyoto-u.ac.jp) (2024年6月5日アクセス) より引用

また，（以上の指摘に比べると些細なことだが）これが「Scholze, Stix両氏に対する呼び名」ではなく，「Scholze, Stix両氏がしているような誤解（をしている人たち）に対する呼び名」であることも明らかであり（「数学的内容に集中する」とはそういうことである），その意味でも中野太郎氏の指摘は不正確である．（B-6終わり）

コメントB-7: 「適切に文献を引用しないということは」とあるが，コメントB-1でも述べた通り，文献引用の有無の適切性を判断する資格があるのは，内容に関する十分な数学的理解がある人だけである．（B-7終わり）

コメントB-8: 当該論文 ess-lgc-iut-amstex.pdf (kyoto-u.ac.jp) にScholze-Stixレポートを引用した方が「後世の人間」にとって有難い可能性が高いことには，純粋な「歴史資料」としての観点からは，私としても同意できるところである．一方，中野太郎氏は「議論があったことを後世の人間が書誌情報から追えなくなる」ことを懸念しているが，望月氏は（コメントA-2でも言及した）自身のレポート 2018-03-ss-report.pdf (kyoto-u.ac.jp) を引用しているため，これは杞憂であるように思われる．また，この「後世の人間」という観点には望月氏も積極的な興味をもっていることは，当該論文の1.5節``The historical significance of detailed, explicit, accessible records"のタイトルや内容から明らかであることを付言しておきたい．（B-8終わり）

最後に次の箇所を引用しておく．

> IUTの正しさに大きな疑問が投げかけられている状況を無視して、京都大学が2019年に数理研の下に「次世代幾何学研究センター」なる機関を設立し、望月氏をセンター長に据えた。（2022年に量子幾何学研究センターと統合して「次世代幾何学国際センター」に改組。センター長は変わらず望月氏。）

> しぶんぎ社，中野太郎氏による記事「 最近の IUT 界隈 - tar0log (4bungi.jp) 」（2024年6月5日アクセス）より引用

Comment B-9 (at the end of Section B): ``Ignoring the situation that raises big questions," but based on many comments so far, including comment A-3, once again, What on earth is the ``big question" that Taro Nakano is talking about, who is ``posing" it with solid evidence, and what exactly is Mr. Mochizuki ``ignoring"? Please let me know.
ここで念のため繰り返すが，Scholze, Stix両氏によるIUT理論への疑義は根拠がきちんと示されておらず（コメントA-6参照），そもそもそういった不完全な批判ですら何かしら数学的な体裁で提示されているのは（私の知る限り）Scholze-Stixレポートのみであって多くの否定的な声はそれに追従しているだけであり（コメントA-4，A-5，A-7参照），更にScholze-Stixレポートに望月氏は反論していて両氏は既に議論から降りている（コメントA-3参照）．
是非，中野太郎氏ご自身がその重要性を強調なさる，「学問的に誠実な姿勢」でもって，上の疑問に対するご説明をお願い申し上げたい．また，当たり前のことだが，以上のコメントを読んで考え方が変わった部分などがあるのであれば，「学問的に誠実な姿勢」でもって，それを適切に表明して頂きたい．（B-9終わり）

Comment B-10 (additional): If a particularly negative biased interpretation such as ``ignoring the situation that raises big questions" is presented, I would consider it as a thought experiment. , I would like to present an interpretation with a particularly positive bias, such as the following: ``Even though the correctness of IUT has been verified many times by multiple experts, and subsequent research is progressing, it is still unreasonable." In light of the current situation where the theory is exposed to meaningless criticism, Kyoto University established the " Next Generation Geometry Research Center " under the RIMS in 2019 to support the further development and dissemination of the theory in a healthy manner. A new organization was established with Mr. Mochizuki as the director. ” (End of B-10)

Comment (C). Regarding the first half of the “Recent developments” section.

> ZEN University is an online university that is being established by Dwango founder Masao Kawakami. There is no such thing as setting up a research center at a university that doesn't exist yet, but the director is Fumimoto Kato (formerly of Tokyo Institute of Technology) and the vice director is Ivan Fesenko (Saiko University). Of course, they are from the Mochizuki group.

Shibungisha, article by Taro Nakano “ Recent IUT area - tar0log (4bungi.jp) ” (accessed June 5, 2024)

コメントC-1：比較的どうでもよいことだが，「まだ存在しない大学に研究拠点の設置もクソもない」という，意図が不明瞭な，不要だと思われる言及には，中野太郎氏の悪意がにじみ出ているように感じられる．（C-1終わり）

Comment C-2: Since Mr. Taro Nakano did not provide a definition of the "Mochizuki Group," it is already clear that pointing out that he is "in the inner circle of the Mochizuki Group" does not seem to make much sense. As pointed out in comment A-7. On the other hand, the fact that Mr. Fumimoto Kato and Mr. Ivan Fesenko, who are independent researchers who are not particularly disciples, are part of the ``Mochizuki Group" is not clear in estimating the definition of ``Mochizuki Group" for Taro Nakano. It might be helpful. (End of C-2)

> In addition, an award has been established to honor researchers who have contributed to the development of IUT.
> ZEN University (tentative name/application for establishment approval) (zen-univ.jp)
> There are the IUT Innovator Prize and the IUT Challenger Prize, and the first Innovator Prize was awarded to papers in 2022 by five people including Mochizuki. Since Fesenko declined the prize money, four people will receive $100,000 (I wonder if the $100,000 will be divided into four, rather than each $100,000 each).

Shibungisha, article by Taro Nakano “ Recent IUT area - tar0log (4bungi.jp) ” (accessed June 5, 2024)

Comment C-3: It doesn't matter, but if you look at the details of the award, you will see that the prize money is awarded "for one paper" each year, so it is not $100,000 each, but $100,000 for four people. (See quote below).

> The award will award between $20,000 and $100,000 to the best paper that includes important new developments in IUT theory and related fields.
> …(omitted)…
> Shinichi Mochizuki, Yuichiro Hoshi, Arata Minamide, and Wojciech Porowski of

> the Institute for Mathematical Sciences, Kyoto University, who wrote the winning paper, will receive a cash prize of US$100,000 from the IUGC (Ivan Fesenko will receive the prize) (declined to accept).

``1st IUT Innovator Award" winning paper selected; IUGC (International Geometry Center) presents 100,000 USD | Quoted from IUGC (zen-univ.jp) (accessed June 5, 2024)

(End of C-3)

> Shibungisha, article by Taro Nakano " Recent IUT area - tar0log (4bungi.jp) " (accessed June 5, 2024)

Comment C-3.5 (odd numbering due to editing error): It says that "the IUT faction pulled money from Kawango," but ``Kawango" = Mr. Masao Kawakami (founder of Dwango) If someone (IUGC investor, IUGC investor) makes a claim (a claim that seems natural to me) that he has been "deceived by a group of evil mathematicians," that is an **insult a personal statement** to Mr. Kawakami. This seems to be regarding the establishment of the IUGC and the award . As you can see from the press conference , especially the part from 45:36, Mr. Kawakami expressed hope for the correctness of the IUT theory, but his attitude was calm and rational. It is true. Furthermore, as can be seen from Mr. Fumimoto Kato's comments from the press conference at 47:38, the core of the IUGC's philosophy lies in the abnormality (= stalemate without any proper mathematical discussion) as pointed out in Section A.) The aim is to normalize the situation and reach a resolution through sound mathematical discussion. to his comments on Twitter (currently X), such as here In addition, for Mr. Kawakami's stance on IUT theory and IUGC, please refer . (End of C-3.5)

Comment C-4: Statements such as "Are these people really researchers?" as if **to say "the IUT faction is a group of fraudsters" are like delusions that are completely inconsistent with reality. completely unacceptable .** Yes, and for me, this is

I don't know who the "IUT faction" specifically refers to, but for example, Mr. Shinichi Mochizuki and Mr. Yuichiro Hoshi (who are also my co-supervisor and supervising teacher) are **excellent people, even if we ignore their achievements in IUT theory. of research accomplishments** an active mathematician who has a wealth **and continues to conduct research on topics that are not necessarily directly related to IUT theory.** If you do a little research, you will find that he is As you can see just by looking at his website Shinichi Mochizuki's latest information (kyoto-u.ac.jp) and Yuichiro Hoshi's paper (kyoto-u.ac.jp) , the "controversy" began (?) in 2018. Since then, their papers have been published and published, and they have been **widely distributed overseas (even though they sometimes contain extremely non-obvious mathematical content). has been accepted by the mathematical community** , of the 2023 (European, prestigious) research conference (Oberwolfach) the report document OWR-2023-42 (mfo.de) including For example , please refer to , which includes not only a lecture on IUT theory by Shinichi Mochizuki, but also a lecture by Shota Tsujimura. The document also includes lectures on joint research by Mr. Shinichi Mochizuki and Yuichiro Hoshi (who have no direct relationship with IUT), as well as a lecture by Tsuyoshi Yamashita, who may be included in the "IUT group." Please confirm that it has been reported.

As for Mr. Mochizuki, the founder of IUT theory, I sometimes see people talk about him as a ``one-hit wonder of IUT theory," but that is simply contrary to the truth. This can be easily imagined (especially for those in academia) since he was a professor at the Institute for Mathematical Sciences at the time of publication of the IUT paper, without looking into his achievements in detail, but as mentioned above, Since then, there have been remarkable achievements in areas other than IUT theory. (End of C-4)

Supplementary note regarding comment C-4: Mr. Taro Nakano rejects the (from my perspective, the most honest) interpretation that the "IUT group" is simply pursuing mathematical truth (I also do not agree with that interpretation). Even if that is the case, I cannot read the details of the IUT faction's purpose from the

article, which makes me question it.
For example, if they are "scammers", what is their aim? Is it status or honor? Or is it money? From my point of view, it seems clear that neither understanding is consistent with reality. (End of C-4 supplement 1)

Supplementary note 2 regarding comment C-4: In section D, I will discuss Mr. Taro Nakano's criticism (on the Internet, and especially) regarding Mr. Mochizuki's "words/phrases," and it is easy to imagine that many such criticisms will appear. Isn't it possible to take the (somewhat paradoxical) view that writing and publishing something like this is the exact opposite of thinking like a ``scammer''? (End of C-4 Supplement 2)

Comment C-5: Related to the above-mentioned point that ``If it is a scammer who is after money, it is inconsistent with the reality", but the prize money of the first IUT Innovator Prize is expected to be donated to the Institute for Mathematical Analysis, Kyoto University. I would like to point out that (has it already been donated?) Mr. Taro Nakano may have understood this when he used the expression ``to put it in the pocket" in a broad sense, but I feel that it is semantically inconsistent.

> Mr. Mochizuki and his colleagues hope to donate the prize money to the Kyoto University Institute for Mathematical Analysis as funds to support research activities related to interuniversal Teichmuller theory and related far-Abelian geometry. It has been.

「第1回 IUT innovator賞」受賞論文決定 IUGC（宇宙際幾何学センター）より10万米ドルを贈呈 | IUGC (zen-univ.jp)(2024年6月5日アクセス) より引用

> 論文が、多種多様な専門性を有する共著者 5 人の共同研究から誕生した経緯が示している通り、宇宙際タイヒミューラー理論および関連した遠アーベル幾何学の発展は、多数の研究者が織り成す研究コミュニティによる協力体制によって支えられており、今後の発展を支 援することの重要性に対する認識から、賞金は、京都大学数理解析研究所への寄付という形で、宇宙際タイヒミューラー理論および関連した遠アーベル幾何学の今後の発展に役立てるために活用することを目指したいと考えております。

望月新一氏による声明文書， 2024-04 Announcement on the occasion of the awarding of the IUT Innovator Prize (Japanese).pdf (kyoto-u.ac.jp) (2024年6月5日アクセス) より引用

（C-5終わり）

Move on to the next section.

> People in the overseas mathematics community are watching closely as Mr. Mochizuki's group engages in such shady things in the name of IUT outreach, while ignoring the academic integrity issues mentioned above. The comments section of the blog entry below by Peter Woit (Columbia University, Mathematical Physics) is constantly filled with comments from readers who appear to be mathematicians and students majoring in mathematics. Disappointment, sadness, anger, pity, etc. about the words and actions of friends are written.

Shibungisha, article by Taro Nakano “ Recent IUT area - tar0log (4bungi.jp) ” (accessed June 5, 2024)

Comment C-6: Please refer to Section B of this article for more details, but I am wondering what specifically is meant by "leaving the academic integrity issues raised above unaddressed". . . (End of C-6)

Comment C-7: It says, ``They do all these fishy things." I don't deny that there are aspects of topics that involve money that can be felt to be ``fishy," but I don't deny that there are aspects of topics that involve money that can be felt to be ``fishy." It is an objective fact that this is not the case. An example of an outreach activity that does not have any "fishy" elements is the writing of an explanatory paper ess-lgc-iut-amstex.pdf (kyoto-u.ac.jp) and various (open to outside) activities. One example is holding research meetings. **a fraudulent argument to ignore or distort such ordinary outreach activities, and then criticize them by saying that they are only doing fishy things at first glance.** It is . .
Furthermore, in the first place, when it comes to researchers, especially extremely talented researchers like Mr. Mochizuki and Mr. Hoshi (even ignoring IUT theory), **the activities that make the greatest contribution to humanity are at the cutting edge of knowledge. research activity that will open up new possibilities** Isn't this a ? As mentioned in C-4, as can be seen from a normal investigation, their research activities are active and going well. (End of C-7)

Comment C-8: It says, "People in the overseas mathematical community are watching closely." Who are the "people in the overseas mathematical community" referring to here? Immediately after, it says, "In the comments section of the blog entry of Peter Woit (Columbia University, Mathematical Physics)," but I never expected that people would gather in the comments section of Peter Woit and his blog entry (A Report From Mochizuki | Not Even Wrong (columbia.edu) As you can see from , many of them are anonymous! I will discuss Peter Woit next, but **to say things like ``people in the mathematics community are paying close attention'' based on anonymous voices like this is to say things like "people in the math community are paying close attention" to the tone of the discussion on ``5 Channel'' in Japan. This is just as strange as using it as a basis** . (End of C-8)

Comment C-9: Readers are left to decide for themselves how trustworthy Peter Woit is, but to simply state my position, in the context of IUT theory, We judge that there is no reason to trust his claims. The rationale for this is as follows:

- In the first place, Peter Woit's academic expertise is not only not in arithmetic geometry, but also in fields such as mathematical physics and theoretical physics, which are far apart from number theory (although there may be some interaction in some cases, basically). It appears to be a field of study. It is realistic for Peter Woit to establish a negative position based on his own mathematical understanding (though it may of course be possible in principle with great effort, so we should not make any assumptions on this point). is imagined to be difficult. In fact, it is very difficult to read through all of the huge content of blog articles due to realistic time constraints, but as far as I have read through several articles, I can say that Peter Woit's statement regarding IUT theory There is nothing in this that is based on his own rigorous mathematical understanding.

- Peter Woit's writings often contain parts that give the impression that he is deliberately distorting the facts. As an example, Peter Woit's ``summary" and ``impressions" regarding a portion of Mochizuki's commentary paper ess-lgc-iut-amstex.pdf (kyoto-u.ac.jp) are as follows.

  > Essentially the claim Mochizuki is making in these first two sections is that the most accomplished and talented young mathematician in his field is an ignorant incompetent, and that everyone Mochizuki has consulted about this agrees with him.

  Peter Woit氏のブログ記事, ABC is Still a Conjecture | Not Even Wrong (columbia.edu) (2024年6月5日アクセス) より引用

First, the premise is that ``the most accomplished and talented young mathematician in his field" is clearly referring to Scholze. On the other hand, (perhaps due to my lack of English ability, I am not sure who ``his" refers to), does ``in his field" mean ``in arithmetic geometry"? It is unclear whether this is ``in Mr. Scholze's field of expertise" or ``in far-Abelian geometry (which is similar to Mr. Mochizuki's style)". Just as a precaution, although there is no doubt that Mr. Scholze is a very good mathematician based on various rumors, there is no reason for him to be particularly highly regarded in far-Abelian geometry. This is obvious since there is no research record in this field.

My comment is based on this premise, but the explanatory paper by Mr. Mochizuki intentionally focused only on the mathematical content, and as stated in comment B-6, certain mathematicians `` Of course, it does not include the point that it is "ignorant and incompetent." The word ``incompetent" is not even used. The words ``ignorance" and ``ignorant" are used several times, but in the context of IUT theory they refer to ``ignorance regarding the content of IUT theory", and Scholze This does not in any way suggest that the statement is ignorant incompetent with respect to arithmetic geometry in general (which is obviously strange and inconsistent with the reality of Mr. Scholze's excellent research results).

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(End of C-9)

Comment C-10 (at the end of Section C): As stated in C-4, if you look into the matter, you will find that Shinichi Mochizuki and others are still doing excellent work as ordinary mathematicians. This is understandable, and it is completely unacceptable to insult someone using antonyms such as ``Are you really a researcher?" Above all, **Mr. Taro Nakano, who frequently emphasizes ``academic integrity,"** seems to be indifferent to Peter Woit's academic integrity, and he also **makes irresponsible anonymous posts in the discussion. the basis for** It is very strange that this is this. In addition, in preparing this article, I revisited various blog articles by Peter Woit, and they `` His recent IUT surroundings - tar0log (4bungi.jp) were surprisingly similar in content to the article this article refers to, ." I would like to express my impressions here. (End of C-10)

コメント(D). 「最近の動き」節，後半部に関して

中野太郎氏は「独立の研究者による仕事」という題で特にJoshi氏の最近の（連続）論文に関して論じている.

> Shibungisha, article by Taro Nakano “ Recent IUT area - tar0log (4bungi.jp) ” (accessed June 5, 2024)

Comment D-1: ``Mochizuki's paper is unnecessarily long and full of strange concepts that are difficult to read, so let's try rewriting it a little more in the existing mathematical language." I am aware that this does not (directly) mean that ``Mr. Taro Nakano thinks so," but many people, including researchers who are engaged in such efforts, are wondering whether it is ``wasteful" or not. As pointed out in Supplement 1 of Comment A-6, it is impossible to judge whether it is effective to ``rewrite it in a slightly more existing mathematical language" without understanding the mathematical content of the theory. It is. (End of D-1)

Mr. Taro Nakano pointed out that the paper in question was denied by both Mr. Mochizuki and Mr. Scholze, and then Mr. Mochizuki's the report document tilt-report-amstex.pdf (kyoto-u.ac.jp) writing (in) Criticize the person's behavior.

> Although Scholze's point in MO is mild, Mochizuki's writing style still uses bold and italics to insult others. "Joshi's paper is like he's the Hallucination of ChatGPT"

or something.

Shibungisha, article by Taro Nakano “ Recent IUT area - tar0log (4bungi.jp) ” (accessed June 5, 2024)

Comment D-2: It is stated that ``the writing style uses a lot of bold and italics to insult the other person", but in general, the ``use of bold and italics a lot" (I personally find it offensive, etc.) Although this may be possible, it should not lead to a particularly objective negative evaluation, and this is completely unrelated to the question of whether the writing has a ``style that insults others". Criticizing even this aspect of appearance is a harmful argument, and (I have no expert knowledge of this terminology, but in my humble opinion) it is **" tone policing** reminiscent of the term ." . . (End of D-2)

Addendum D-2a3 (2024/6/9): We received a comment that the following passage about "Hallucination" falls under "abuse" and that it is inappropriate to defend it. Personally, I had no idea that this could be considered ``abuse." I would like to sincerely apologize for my careless description. Although I feel the same way about the essential part of Comment D-3's argument (the last part in bold), Taro Nakano's criticism of the hallucination passage is valid, and Mr. Mochizuki searched for a more appropriate expression. That would have been better, I corrected. (End of D-2a3)

Comment D-3: (Added on June 9, 2024: I was wrong about an important part of this comment, so please see Addendum D-2a3.) In general, it is important to A "degrading writing style" should never be endorsed. Therefore, if many people were to have such an impression, the statement that ``Mr. Mochizuki should have looked for a better way of writing" seems to be a valid opinion in itself. . . like ChatGPT's Hallucination (though I cannot judge whether this is actually the case at this point) **On the other hand, if the content of Mr. Joshi's paper is really** , then pointing it out would be a good way to ``speak up". It is highly questionable whether this applies to the term ``to be dirty and disrespectful." Considering this point of view, I have to say that from my point of view, having actually read the entire report document, it is a complete mystery as to where there is an expression that can be conclusively interpreted as ``foolishly insulting the other party." (There are some statements that I find problematic, regardless of whether they are ``foolishly insulting the other person" or not, but I will discuss them in comment D-4.)
I would like mathematician readers (even if you are skeptical about the correctness of the IUT theory) to try and imagine yourself from Mr. Mochizuki's point of view. Suppose that the theory you have spent so much effort building is not accepted by the mathematician community due to various reasons. So, if a mathematician who looked as if he was one of the few who understood his own theory, and made a presentation claiming that he had "understood the theory and corrected the errors," was **really** ChatGPT If something as completely incoherent as the Hallucination had come to be accepted ``normally" as if it were a ``savior to save the chaos," then the argument that it was ``completely incoherent." has no choice but to send out the message, and the description of its meaning and to what extent it is incoherent is not particularly akin to a ``useless attack", right? (Added on June 9, 2024: I was wrong about this. I was not aware that the phrase "Hallusination" could be considered as "abuse.") I deeply apologized and said, (Mr. Taro Nakano's criticism was appropriate." Mr. Mochizuki should have searched for a better expression.")
Although it is not limited to Taro Nakano, Mr. Mochizuki's point about the report is **that ``Mr. Mochizuki's report goes beyond the level of phrasing and must be exaggerated in terms of content.'' (Unconsciously) assumptions** It often seems that are behind it. (Added on June 9, 2024: I still think this way, but I have reconsidered and regretted that the story about Hallucination was indeed an exaggeration.) For readers, Mr. Mochizuki's report document is I would like you to look at it with your own eyes and judge whether it can be concluded that it is inappropriate to use abusive language and belittle the other person (however, see comment D-4). (End of D-3)

Supplementary note to comment D-3: This is just my impression, but the negative biased description that runs through Taro Nakano's article is what unnecessarily "punishes down" Mr. Mochizuki and the people

around him. I feel that. Even if I were to write an article that deals with the same (substantially biased) semantic content, I think it would be possible to write it in a way that makes it look more unbiased, but I haven't done that (from what I see). It is strange and unfortunate that there were many people on the Internet who took the article as if it were a fair summary article, despite the fact that the article was written in a biased manner. (End of D-3 supplement)

> In Joshi's paper, the number of an important theorem happens to be ``Theorem 9.11.xx," and some thoughtless teasing like ``Is it a coincidence that it's ``9.11" or is it some kind of rhetoric or humor?" In some places, it is
> … (Omitted, quote from Mr. Mochizuki's report)…
> If you consider the opposite case, you can see that in rebuttal to a paper written by a Japanese person, someone might say something like, ``By the way, your theorem number here is 8.6, which is the same date as the date of the atomic bombing.I wonder if it has any meaning." I wonder what people would think if there was a joke mixed in.

Shibungisha, article by Taro Nakano " Recent IUT area - tar0log (4bungi.jp) " (accessed June 5, 2024)

> …(above omitted)…
> [where we note that it is not clear whether or not the number "9.11..." assigned by the author to these key results in [CnstIII] was purely coincidental or a consequence of some sort of sense of rhetoric or humor that lies beyond my understanding].

Quoted from Shinichi Mochizuki's report document, tilt-report-amstex.pdf (kyoto-u.ac.jp) (accessed June 6, 2024)

Comment D-4: This is a completely valid point. Mr. Mochizuki's comment in this part seems unnecessary in context and extremely inappropriate in content, and I have strong negative feelings about it. (End of D-4)

Comment D-4 Supplement: Mr. Mochizuki's description of ``9.11" is strange and I have no intention of defending it at all. It is common for the ``correctness" to vary, such as some parts of the text being incorrect depending on the situation, and being completely correct in other parts or situations. ``In the above content, Mr. Mochizuki's words are clearly strange, and Mr. Taro Nakano's points are clearly valid." Therefore, Mr. Mochizuki is a strange person, Mr. Taro Nakano is a decent person, and Mr. Mochizuki is if this article's content, which is strongly negative about the subject, **were interpreted in a simplistic** It would be strange and unfortunate way, such as, ``Most or all of the content is correct." It should also be noted that the statement of the problem has nothing to do with the mathematical success or failure of the IUT theory (even though it is a major premise that it cannot be confirmed at all) (I think many readers are aware of this, but just to be sure)) I would like to remind you once again. (End of D-4 supplement)

> まあ望月氏はこういう人なのだと言えばそれまでだが、科学的議論の場に平気でこういう物言いを混ぜ込む態度が、彼の仕事を真剣に評価する気持ちを萎えさせ、IUTが見捨てられる一因になっている。

しぶんぎ社，中野太郎氏による記事「 最近の IUT 界隈 - tar0log (4bungi.jp) 」（2024年6月5日アクセス）より引用

コメントD-5：直前に述べた通り``9.11"のくだりに関しては決して肯定できるものではない．また，一般論としては，たとえ何か内容上は「対立」のような構造があるとしても，「喧嘩」のよう

な雰囲気ではなく友好的で穏和な空気感の下での対話が望ましいのも，当たり前のことである．

On the other hand, I would like to point out that there are multiple (unconscious?) biases in Taro Nakano's argument.
まず，「平気でこういう物言いを混ぜ込む態度」とあるが，これだけ（ここまで指摘してきたように，多くが理不尽で無意味な）批判に長い間晒され続けている現状にあって（※「理不尽で無意味」かどうかは別にしてその状況自体は中野太郎氏のような「否定的」側でもよくわかっているはずのことである），なぜ「平気で」の所業だと断定できるのか不思議である．
Also, it says, ``It discourages people from seriously evaluating his work," but ``evaluating his work seriously" is a very heavy word, and this was originally meant as ``a careful reading of the original paper on IUT theory." I was seriously thinking of aiming for a mathematically accurate understanding and seriously evaluating its success or failure, but when he started saying things like this, I got discouraged and stopped." In other words, it is on a completely different level from saying things like ``to discourage people from supporting him (behind the scenes)," and I don't think it's an acceptable expression to use without providing evidence. Although it may seem like a ``flip-flop", I believe that using words like these ambiguously can also lead to (unconscious) confusion among readers.
Furthermore, although it says that ``IUT will be abandoned," I am not sure what it means when a mathematical theory is ``abandoned." Considering the nuance of this word, it seems as if the mathematicians who ignore the IUT theory are "greater" than the IUT theory and Mr. Mochizuki, but (if that's what they mean) The hierarchical relationship was discovered by Taro Nakano on his own. Either way, it's an inappropriate phrase.
Finally, it says that it is a contributing factor, but it is true that (the correctness of the mathematical theory has nothing to do with the author's personality and behavior, so in that sense it is a strange story, but in terms of human psychology)) I feel that it cannot be denied that Mr. Mochizuki's comments are accelerating the negative impression of theory. On the other hand, the reader should also be aware of the chronological order in which Mr. Mochizuki's particularly extreme (?) remarks this time occurred after the social situation deteriorated significantly. Would like to have. I would also like to once again draw your attention to the content of comment D-3. (End of D-5)

> If you want to save IUT (although I don't think you can save it now), wouldn't it be better to be more aware of this? Truly, there is too much dishonesty on many levels with Mr. Mochizuki and his circle of cronies.

Shibungisha, article by Taro Nakano “ Recent IUT area - tar0log (4bungi.jp) ” (accessed June 5, 2024)

Comment D-6: (2024/6/9 Addendum: In relation to Addendum D-2a3, please read "Comment D-4" in this comment replaced with "Comment D-3 or D-4".) I would like you to think about it again in light of the various points made so far, but I have doubts about what kind of substantive content remains in the "dishonesty" that Taro Nakano refers to other than the part in comment D-4. . . Regarding comment D-4, I do not mean to make light of it, but it is obvious that it has nothing to do with the mathematical correctness of IUT theory. There may also be an opinion that it is simply a matter of organization and not a substantive point or counterargument, but it is a matter of "wording" (phrasing) as in (comment D-3 and) comment D-4. Regarding this issue, I feel that it is semantically inconsistent to categorize it as an issue of ``integrity." (End of D-6)

> Averting their eyes from that, their cronies and fans say things like "IUT is amazing! Japan is amazing! It's too difficult for people overseas to understand how amazing it is!" or "We should discuss it more rather than ignore it." However, sane people can already see through it and have grown cold.

Shibungisha, article by Taro Nakano “ Recent IUT area - tar0log (4bungi.jp) ” (accessed June 5, 2024)

Comment D-7: First of all, just to be sure, Mr. Mochizuki, who is Japanese, has been conducting research activities in Japan for over 30 years, and also about building and maintaining the blog article “Walls with Heart”. The importance of | Shinichi's "vote of the heart" - Even considering Shinichi's personal circumstances, as can be read from Rakuten Blog (rakuten.co.jp), the "amazing" aspects of his research are considered "Japanese." It would be rather inappropriate to immediately conclude that it is completely unrelated. Also, although I am neither confirming nor denying this, for example, keeping in mind that many people are happy when a Japanese team wins a world championship in sports, it is equally important to note that there are many people who are happy when a Japanese team wins a world championship in sports. It seems to be a normal and common national sentiment to be happy when a mathematical theory comes out (even if you don't understand the content of the mathematics). This is especially true since tax money is used for mathematics research.
On the other hand, in general terms, I agree that it is very uncomfortable to connect mathematical theory so easily with the nation. Mathematical correctness itself is open to everyone, transcending national borders, and if ``IUT is amazing," then it is not Japan that is ``amazing" (first of all,) It is a matter of course that the founder is Mr. Shinichi Mochizuki.

It can be assumed that "entourage" is a synonym for the "IUT faction" and "Mochizuki group" mentioned by Taro Nakano, but the people who belong to these groups are certainly (and in a sense, naturally) "IUT amazing". !", but regarding IUT theory, it is clearly non-mathematical that ``Japan is amazing! It's too difficult for people overseas to understand how amazing it is!" I have never heard anyone make such a claim (which is completely false and inconsistent with reality). Rather, as I have already pointed out, Mr. Mochizuki's approach is that ``if you have a normal, sound mathematical discussion, you should be able to figure it out" (see Comment A-6 Supplement 3).
As a reminder, the ``IUT faction" includes two foreign researchers, Mr. Fesenko and Mr. Porowski, even if we restrict ourselves to authors of related papers. (End of D-7)

Comment D-8: Regarding ``we should discuss this more rather than ignore it", it seems obvious considering the circumstances in which Messrs. Scholze and Stix, mentioned in comment A-3, unilaterally withdrew from the discussion in the first place. . . On the other hand, "not ignoring" means "participating in mathematical discussions based on rigorous mathematical understanding." Whether positive or negative, as long as you don't aim for strict mathematical understanding and just consume it as a topic of discussion, it's okay to be ignored by people with that attitude/expertise. It doesn't matter (not that everyone necessarily thinks that way, and I don't know what Mr. Mochizuki and others think, but at least) it seems to be a fairly common attitude among mathematicians. (However, see the supplement below). For example, Mr. Taro Nakano has written an article that is particularly negative about the IUT theory based on weak evidence, but I feel that it would have been much better if he had simply ignored it instead. (*I myself am not a member of the ``IUT group" in the narrow sense of the word, such as a paper author, so I am not in a position to express my opinion in this context.) (End of D-8)

Comment D-8 Supplement: The penultimate sentence of comment D-8 above is not in any way disrespectful to non-specialists/non-mathematicians in general; in fact, I personally (especially As someone who is enrolled in a graduate school at a national university, I believe that it is essential that non-specialists widely understand the value of research. It is also natural that it is important to have even the slightest interest in experts/mathematicians (even if it's just a topic of conversation) as a starting point. Comment D-8 above was made with in mind the context in which Mr. Nakano's argument that ``we should discuss this rather than ignore it" is intended. (End of D-8 supplement)

Comment D-9 (at the end of Section D): It says that ``decent people can see right through it, and they are

completely cold." However, the **average ``decent person'' feels that the IUT theory is correct or not. This means that I don't know (unless it's based on my own rigorous mathematical understanding)** . Of course, it may be possible to end up with a negative impression after considering various things, but as I have already pointed out, in the case of Taro Nakano's article, there are many problems with the way it is argued. hearted **It would be very strange and unfortunate if an increasing number of people were to accept the existing negative tone, which has little basis in it, and become completely cold-** . (End of D-9)

ここまでお読みになった読者は，ここで「要約」節に改めて目を通して頂くと，整理の役に立つかもしれない.

感想

I myself wish to be of some help in improving the unfortunate current state of IUT theory, and I have been studying theory (preparatory papers and explanatory papers), as well as other regular graduate school students. At the same time, I am devoting my time to my activities as a. Normally, I would have wanted to devote my time to such mathematical activities, but an article written by Mr. Taro Nakano of Shibungisha that had a very biased content went viral, and even people relatively close to academia lost interest in it. I have observed that it is being received as if it were a ``proper'' article, so I decided to write a rebuttal article like this (more ``social'' than ``mathematical''). It is a great shame that I was motivated to make the (stupid?) choice of spending time creating (?). (When I started writing it down, I found that Taro Nakano's article had too many ``tsukkomi'' points, and writing this article turned out to be a truly laborious task that far exceeded my expectations at the time I started writing it.)

Also, not only as a time cost issue, but also as a philosophy, until I have a detailed understanding of IUT theory, I would like to focus only on purely mathematical aspects of my related activities. It was. In that sense as well, what led to the writing of this article is extremely irregular.

I don't think my article will have that much influence, so I can imagine that there will continue to be countless poorly grounded, crudely negative comments about the IUT theory on the Internet. If I react every time, I will not be able to make any progress in the important mathematics, so I would like to refrain from such ``social activities'' for a while.

However, as far as this article is concerned, now that I have written it, I am expecting to receive some reactions (opinions and impressions). (Of all the various assumptions, the most desirable one is that Taro Nakano respond appropriately, such as retracting or revising the article and issuing a statement to that effect.) The above. For these reasons, I don't think it's appropriate to spend a lot of time responding to such opinions and impressions, but this is not an attempt to argue that I won't accept criticism at all; If you find anything strange in the article, please let me know.
Although it may not be possible to complete the task due to practical issues such as time constraints, the ideal/principle is that (just like the example of Mr. Lepage in supplementary comment A-4) I believe that it is important that we aim to have constructive discussions with each other in a friendly and calm atmosphere and with a polite attitude.

> Nevertheless, despite his initially quite skeptical/negative position, I think that it is also important for you to know that our discussions (between the summer of 2017 and the fall of 2021) were carried out in a completely **orderly**, **rational**, and **friendly* atmosphere.

, a document written by Mr. Shinichi Mochizuki about the contents of the email he sent. Quoted from reopen-e-mail-2022-06-30.pdf (kyoto-u.ac.jp) (accessed June 7, 2024)