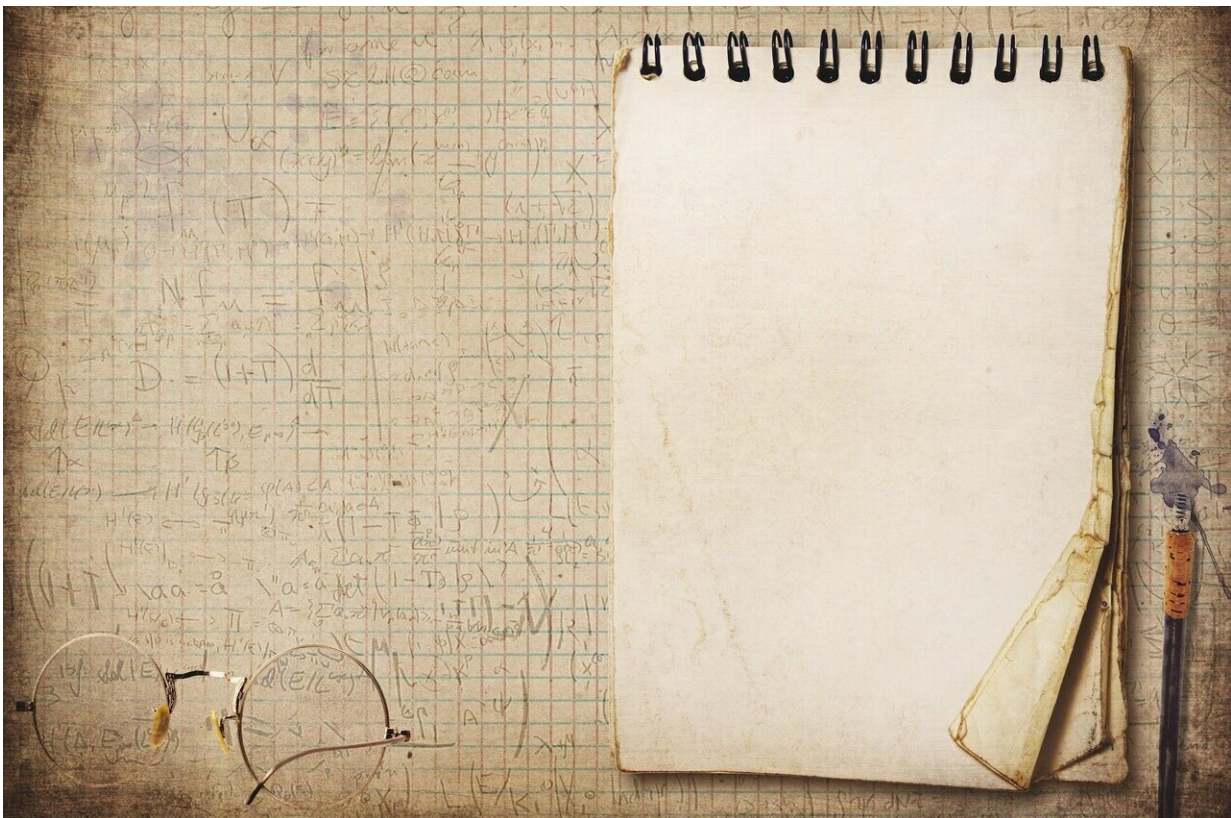# Mochizuki's inter-universal Teichmüller proof has been published (Update)

April 7 2020, by Bob Yirka

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After eight years of debate, Japanese mathematician Shinichi Mochizuki has found a publisher for his mammoth undertaking—the inter-universal Teichmüller theory (IUT). As part of the 600-page proof, Mochizuki

claims that he has solved [the abc conjecture](#). The proof appears in *Publications of the Research Institute for Mathematical Sciences*—Mochizuki is editor in chief there.

Shinichi Mochizuki became well-known in the math community long before he wrote the IUT for his work in number theory and arithmetic geometry. He is notoriously shy of media and has refused to give interviews. But he reportedly began working on the IUT sometime in the early 2000s and completed the work sometime before 2012—he self-published the [proof](#) on his own website that year, and was immediately met with skepticism as the work was incredibly dense and complex to the degree that other mathematicians could not understand what he had written. Adding to the confusion was a claim by Mochizuki that he had solved several conjectures in the proof, among them one of the most famous open problems in number theory—the abc conjecture.

Because of Mochizuki's reputation, many mathematicians believed that the proof was sound, and that all that was needed was for the math community to bring itself up to Mochizuki's level of understanding. National workshops were conducted in 2015, followed by international workshops the following year. But none of them led to an understanding of the IUT. Making things worse was Mochizuki's refusal to attend the workshops or offer much in the way of clarifying his work. Then, two years ago, several noted mathematicians met with Mochizuki to discuss the proof, again failing to understand his work fully. Shortly thereafter, several of those who had met with Mochizuki claimed that there were gaps in the work that made it impossible to recognize it as a proof. Mochizuki responded in an [open letter](#) suggesting that the gaps claimed by his colleagues were the result of their attempts to simplify the work and insisted that there were no gaps in his proof.

Mochizuki has made no public comments about the publication of the IUT and has refused all interview requests. Editors of the journal that

published the proof told the press that Mochizuki recused himself from the process, and that they came to the decision to print on their own—a claim that has some wondering how that might have come about, because it would indicate the paper has been peer-reviewed.

More information: Preprints: