Proof by OpenAI of the existence of Quantum Yang-Mills Theory

2nd Statement by the Shepherding Committee, Nov. 3, 2026

Michael R. Douglas

David J. Gross (Chair)

Arthur Jaffe

Igor R. Klebanov

Nikita Nekrasov

We would like to update the progress of our committee in shepherding the LLM produced result on the existence of quantum Yang-Mills theory to the community of scientists. We intend to issue updates periodically.

Currently, we are focused on checking the Lean proof of the existence of pure Yang-Mills theory, specifically that the definitions and problem statements correspond with those that are standard in physics and mathematics, and that the formalization aligns with the informal treatment. This effort is proceeding well. We hope to complete it very soon. Once this validation is done, we will release the Lean proof, hopefully next week. In all cases we will announce any release of LLM produced material a full day in advance.

We attach in a separate document a list of the rules and procedures of our committee.