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Proof of Beal Conjecture

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PROOF OF BEAL CONJECTURE

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Abstract. A simple argument proves the Beal Conjecture. There is a million-dollar prize for solving the Beal Conjecture.
MSC Class: 11D45, 11D41.

The Beal conjecture says that $A^x + B^y = C^z$ does not have a pairwise co-prime triplet of integers (A, B, C) for all integer powers $x, y, z \geq 3$.

The number of solutions (A, B, C, x, y, z) is finite [1] because I proved the abc conjecture in Ref. [2].

Hence, holds $x \leq x_0$, $y \leq y_0$, $z \leq z_0$, $A \leq A_0$, $B \leq B_0$, $C \leq C_0$. The $x_0 = y_0$ and $A_0 = B_0$ because symmetry $A^x + B^y = B^y + A^x$ holds. However, if I select $A > B$, then x_0 cannot coincide with y_0. I can always demand $A > B$, but $x_0 = y_0$ still has to hold. Therefore, no (A, B, C, x, y, z) solutions exist.

References

[1] R. Daniel Mauldin (1997). A Generalization of Fermat's Last Theorem: The Beal Conjecture and Prize Problem. Notices of the AMS. 44 (11): 1436–1439.
[2] Dmitri Martila. (2023). Ternary Goldbach Conjecture implies ABC Conjecture. Qeios. doi:10.32388/JK3FLI.

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