AN ALGEBRAIC-ANALYTIC APPROACH
OF FERMAT-CATALAN CONJECTURE

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Abstract

We begin with Beal equation (or Fermat-Catalan) $U^{c+2} = X^{a+2} + Y^{b+2}$ and establish two equivalent equations. We generalize the approach to all Fermat-Catalan equations which allows us to relate the problem to Matyasevich theorem. Our approach will lead us to propose a new conjecture concerning Fermat-Catalan equations.

References

[1] H. Darmon and A. Granville, On the equations and ., Bull. London Math. Soc. 27 (1995), 513-543.

[2] N. Elkies, The ABCs of number theory, Harvard Math. Rev. 1 (2007), 64-76.

[3] R. D. Mauldin, A generalization of Fermat's last theorem: The Beal conjecture and prize problem, Not. Amer. Math. Soc. 44 (2003), 1436-1437.