Some new estimates on Egyptian Fractions

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Abstract

I shall propose the results from and ongoing project in collaboration with Cyril Banderier and Florian Luca. In particular I shall explain an upper bound for the function $A(n)$ which counts the number of positive integers a such that a/n is of the form $a/n = 1/m_1 + 1/m_2 + 1/m_3$ for some positive integers m_1, m_2, m_3. This improves earlier work from [1].

References

[1] Croot, Ernest S., III; Dobbs, David E.; Friedlander, John B.; Hetzel, Andrew J.; Pappalardi, Francesco "Binary Egyptian fractions", *J. Number Theory* **84** (2000), no. 1, 63–79.

[2] Banderier, Cyril, Luca, Florian and Pappalardi, Francesco "The Erdős–Straus conjecture and ternary Egyptian fractions", *in preparation* (2018)