1106-VQ-2599 **Robert Erra***, 14/16 Rue Voltaire, 94276 Kremlin Bicetre Cedex, France. *An algorithm to solve the Erdös-Strauss equation.* Preliminary report.

The Erd{̈o}s-Strauss conjecture states: for all integers $n > 1$, $4/n$ have an Egyptian Fraction Development (EFD) of length at most 3, i.e. for all integers $n > 1$ the Erd{̈o}s-Strauss equation, has a solution: $\frac{p}{q} = \frac{1}{x_1} + \frac{1}{x_2} + \frac{1}{x_3}$. This conjecture isn't proven but a result by Mordell states that the conjecture is true for all n except possibly the Mordell primes. We propose here an algorithm that is a Las-Vegas algorithm, i.e. it can fail but when it finds a solution, the solution is correct. The algorithm we propose is very simple, we just need an algorithm that gives an EFD: compute the EFD of $\frac{4i}{q}$ from i=1 till a solution of length 3 is found and divide the solution by i. Despite its simplicity, this algorithm gives very interesting results with the Bezoutian algorithm:

- For all experiments it has always found a solution;
- It can be quite fast but with some rare pathological cases.
- All integers i that gives a solution verify $(i/q) = -1$.

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