To: University Research Award Selection Committee

Dear Sir,

At Prof. Baica's request I am writing this letter of recommendation about her research. Indeed, I am very pleased to write about her accomplishments. I first met her about eight years ago at the "Pannonian Applied Mathematical Meetings (PAMM)". For about seven years she was invited speaker at the PAMM Summer Conferences in Europe. I am a prominent member of the Scientific Council of The Editorial Board for the Monographical Booklets in Applied and Computer Mathematics (MB-series) which is a publication of The Central Europe Academy of Sciences. This Academic Institution binds together the former East European Countries with the Western European countries. The MB-series, published in a limited edition, are exchanged with top libraries, and Dr. Baica published two very important books MB-15/PAMM and MB-21/PAMM there. In both books she put together her results of more then 32 papers published in prime international professional journals over the years.

Next I will discuss some of her significant results.

BOOK I.

The Euler System for the Algebraic Number Theory and Mathematical models in Pollution for the Thermopower Plants.

In the first part she developed a new algorithm which turned out to be THE GENERALIZED EUCLIDEAN ALGORITHM and it is known as Baica's General Euclidean Algorithm (BGEA). With (BGEA) she proved many long time open questions in the Algebraic Number Theory as (1) Hermite's problem, (2) Dirichle's problem, (3) Galois' theory of polynomials problem, (4) n-Dimensional Fibonacci numbers problem, (5) developed n-Dimensional Continued fraction Algorithm, (6) the explicit proof of Hilbert's universal Algorithm restricted periodicity problem (known as Hilbert's 10-th problem), (7) the original Euclidean Fermat's Last Theorem (EFLT) problem, (8) n-Dimensional Euler-Lagrange Theorem, (9) solutions of some very complicated Diphantine Equations and (10) sums of some Infinite Series. With all of these she proved that (BGEA) is the Euler System for the Algebra of the n-Dimensional Euclidean Geometry which is the Algebraic Number Theory invented by Gauss.

In the second part she used some results obtained with M.Cardu in which she performed the Mathematical models regarding Pollution in the Thermopower plants (TPP-s). Latter, again with him, she has another ten papers related with the same subject

BOOK II.

Algorithmic Solution of the original Euclidean Fermat's Last Theorem (EFLT).

In this book she includes all her previous results regarding (FLT). In my opinion she proved (EFLT) in Euclidean using (BGEA) because no one yet contradicted her professionally during of these eight years since she first published her results. She proved that G. Faltings proof of (FLT) in Elliptic (ELFLT) is isomorphic with her proof of (EFLT) using the solvability by radicals. Also, she proved that (ELFLT) is not the same as (EFLT) since in Elliptic it can not be proved that for n=2 (FLT) has the same parametric solution (known to mathematicians for long time) as in Euclidean, since in Elliptic the proof only starts with case n=3 and it can not be done for n=2.

This is a fantastic result if it turns out that she is right and I believe that time will be in her side. Gauss tried to solve (EFLT) and he is not less then Gauss in the History of Mathematics because he did not succeed in proving it in his time. In any case (BGEA) is as important in n-dimensional Algebraic Number Theory as is the original Euclidean Algorithm (EA) in quadratics and (EA) is (BGEA) for n=2.

THE PROOF OF GOLDBACH's CONJECTURE

It is another one important result in her papers. This problem is to prove that every even number >2 is a sum of two primes. It is also true that every odd number >5 is a sum of three primes. This problem is open since 1742 and it is in contest for a million USD. In 1932, Hardy and Little wood proved by unit circle method approximation that the conjecture is true up to 10^11. By computers it was shown that it is true up to 4.10^11 and Peretti proved by unit circle method that it is true again up to 4.10^11. This is a major result, but she found a minor mistake in his proof. Finding his error, she proved, using for the first time the approximation with Laplace Transform, that the conjecture is true up to 4.10^11 too. In another paper called "Clarifications" she assumed Peretti's proof of Rieman Hypothesis and she got the same approximation. Recently in a joint paper with Peretti, she proved that the approximation can be extended up to 4.10^n, where 180<n<190.This is a very impressive result and she delivered it at the International Conference in Applied Mathematics in Timisoara-Romania on 3-9 November last year where I was also present, as invited speaker. This problem is awarded with one million USD if proved and Prof. Baica is one of the competitors.

In conclusion, her accomplishments and her prodigious work speaks for her, and I can not believe that any of her PEER will not be able to see what I see that she is an outstanding Mathematician. I was surprised when Dr. Baica told me that she applied five times in the last six years for this award and each time she was rejected and I will be even more surprised this time when with these accomplishments in a short period of five years, Dr. Baica will not be awarded with this University Research Award again. Anywhere she goes she represent with honor her University, and I do recommend her highly for this award.

I will appreciate if my letter will be taken in consideration and you will make a favorable decision for Prof. Baica. This will show that her University stands beside her, as she stands for her University, in her battle for recognition of her outstanding results.

Thank you.

Sincerely,
Dr. Jovo Jaric,
Professor of Mathematics, University of Belgrade.