

The purpose of this book is to bring together all the results in the author's work on the Algorithmic solution of the original Euclidean Fermat's Last Theorem (EFLT) that was given in her eight published papers.

We will describe the Generalized Euclidean Algorithm known as "Baica's General Euclidean Algorithm (BGEA) elaborated by the author and published for the first time in the Pacific Journal of Mathematics in 1984.

Historically, the problem started with the so-called Hilbert's Tenth problem.

Hilbert's goal (Zahlbericht) was to determine a universal algorithm by mean of which all the open problems in Algebraic Number Theory of n - dimensions could be solved. All of these problems solved in quadratics from the periodicity of the Euclidean Algorithm remained open problems in higher dimensions and among them is the solution of Fermat's Last Theorem, which was originally started in Euclidean terms (EFLT). In his 10-th Problem Hilbert asked for the Generalized Euclidean Algorithm (BGEA) now Baica's Generalized Euclidean Algorithm, described in Chapter II of this book which solves all of these n -dimensional open problems, making (BGEA) the Euler System of the Algebraic Number Theory. (BGEA) is the work of Euclid, Euler, Lagrange, Hermite, Jacobi, Perron, Hilbert, Hasse, Bernstein and Baica put together. Their work is described in Chapter I, of this book.

In Chapter III of this book we will discuss A. Wiles's attempt to prove the Elliptical Fermat's Last Theorem (ELFLT). Actually it was G. Faltings who finished the proof. Also, we will show that (ELFLT) is equivalent to (not the same as) the original Fermat's Last Theorem (EFLT) stated by Fermat in Euclidean terms.

This book may be profitably used by researchers in Mathematical and Computer Sciences, postgraduates and well prepared graduate students who use algorithms in Applied Mathematics.

In publishing this book I would like to express my gratitude to my late doctoral research advisors Jürgen Schmidt, Helmut Hasse and Leon Bernstein. Without their generous help, advice and encouragement I could never have begun to work on this very challenging problem. They encouraged me to extend my research beyond my dissertation, which finally brought me to prove the Euclidean Fermat's Last Theorem (EFLT).

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All of the author's results contained in this book were published in professionally reviewed international Journals and are quoted in the references.

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