Universitatea *Transilvania* din Braşov

HABILITATION THESIS

SUMMARY

Title: *Contributions to the study of algebras obtained by the Cayley Dickson process and some of their applications*

Domain: Mathematics

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This habilitation thesis summarizes original results obtained by the author in the study of algebras obtained by the Cayley-Dickson process.

This thesis is organized in five chapters, as follows. Chapter 1 is a brief introduction of some knew important properties and results regarding algebras obtained by the Cayley Dickson process. Chapter 2, 3, 4 contain reproductions of some publications collected in this thesis referring to some results and applications of algebras obtained by the Cayley-Dickson process: some new approach regarding their level and sublevel, some new obtained identities and properties and some of their applications in complex analysis and in Coding Theory. The last chapter contains some research directions. We complete this thesis with 3 Annexes and a Bibliography with 135 titles.