

بسم الله الرحمن الرحيم





شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم



جامعة عين شمس

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لم ترد بالأصل



On subclasses of close-to-convex functions and related functions

B1720C

A THESIS

Submitted to the Mathematics Department
Aswan, Faculty of Science For Partial
Fulfilment of Master of Science
(Mathematics)

BY

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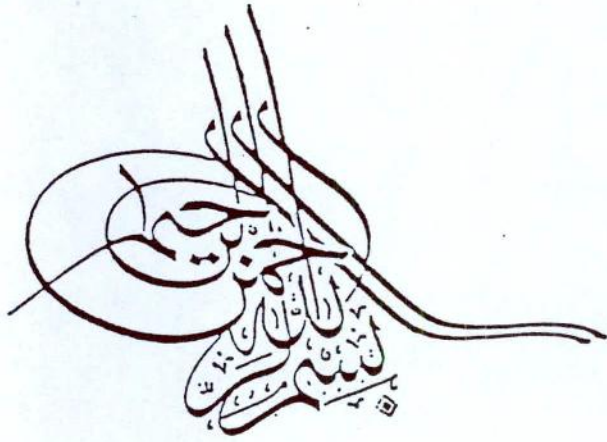
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(1995)



(سورة يوسف ، آية ٧٦ ك)

To ...

The spirit of my father,

My Mother and

My Family....

ACKNOWLEDGMENTS

I wish to express my greatest gratitude to **GOD** Almighty, who gave me the strength and the knowledge to bring this thesis to light.

I am greatly indebted to my supervisor, **Prof. Dr. A. S. MASSHOR** Professor of Pure Mathematics, Faculty of Science, Tanta University, for his supervision to this thesis, Constructive advice, and continuous encouragement.

I have pleasure in thanking **Prof. Dr. A. M. KHIDER**, Mathematics Departement, Aswan, for his encouragement.

Thanks are also due to **Dr. A. A. El-Nahas**, Acting Head of Mathematics Departement, Faculty of Science at Aswan, South Valley University, for his kind help.

It is a pleasure to express my gratitude to my supervisor, **Dr. H. R. ABDEL-GAWAD**, Lecturer of pure Mathematics, Faculty of science, South Valley University, for suggesting the problem involved in this thesis, his endless help, encouragement, advice and instructive guidance during the preparation of this work.

I wish to thank also **Prof. Dr. M. A. EL-MAGHRAPY**, Dean of the Faculty of Science, South Valley University, for his encouragement and unfailing help.

I would like to dedicate my thanks to **Prof. Dr. A. I. KORAIEH** and **Prof. Dr. M. T. AL-HATY**, Vice Dean, Faculty of science, Aswan South Valley University, for their advice and encouragement.

Also my deepest thanks for **Dr. M. M. EL-KADY**, Lecturer at Faculty of Science, South Valley University, **Mr. N. M. ALI** and **M. E. HUSSEIN**, assistant lecturers, Faculty of Science, Aswan South Valley University, for their sincere cooperation.

My special thanks to my colleagues in the **Departement of Mathematics**, Faculty of Science at Aswan, South Valley University for their valuable help and advice.

NEHMA A. EBRAHEM



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SUMMARY

S U M M A R Y

Denote by S the class of functions f which are analytic and univalent in the unit disc $D = \{ z : |z| < 1 \}$ in the complex plane $\mathbb{C}$ and normalized so that $f(0) = f'(0) - 1 = 0$. Let P denotes the class of analytic functions

$$h(z) = 1 + \sum_{n=1}^{\infty} c_n z^n,$$

which have a positive real part in D .

The subclasses of S consisting of functions which are convex, convex of order α , starlike, starlike of order α , close-to-convex and close-to-convex of order α , are denoted by C , C_α , S^* , S_α^* , K and K_α respectively. Such that, for $\alpha = 0$, we have $C = C_0$, $S^* = S_0^*$ and $K = K_0$.

They are related by the inclusion relations

$C \subset S^* \subset K \subset S$, and $C_\alpha \subset S_\alpha^*$. (see [13], [21], [28], [38]).

In, **Abdel Gwad and Thomas** [2] are considered a certain class J of analytic functions for a subclass J in K , such that $J \subset K$.

In this thesis we develop some of the basic properties of functions, a subclass J_α in K_α , such that, $J_\alpha \subset K_\alpha$.

The aim of the thesis is to define and study some classes of analytic functions in D .

This it consists mainly of three chapters.

In the first chapter, we recalled the known results for the various subclasses of S are listed. It consists of three sections:

(ii)

§ 1.1 contains some preliminaries.

§ 1.2 contains the definitions, notations and basic results that are needed in the subsequent chapters are given.

§ 1.3 known results about some coefficients, growth, distortion, other theorems and Lemmas.

In chapter two we develop some of the basic properties of the functions in a new subclass J_α of K_α , it consists of seven sections. A variety of problems are dealt with, including distortion theorems, coefficient estimates, the Fekete - Szegő problem for the class J_α are given, radius of convexity, growth problem for the class J_α , and growth problems for the class J , (length - area).

Finally, chapter three introduces the classes $R_t(\alpha, \beta)$ and $N_t(\alpha, \beta)$ of univalent functions with negative coefficients.

Sharp results concerning with the coefficients, distortion theorems, and the radius of convexity are determined, it is also shown that, the classes $R_t(\alpha, \beta)$ and $N_t(\alpha, \beta)$ are closed under "arithmetic mean".

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CHAPTER I
PRELIMINARIES