

On the theory of differential subordination and superordination

TEODOR BULBOACĂ

Babeş-Bolyai University, Cluj-Napoca, Romania

bulboaca@math.ubbcluj.ro

The lecture deals with some recent results obtained by the author involving different classes of analytic differential and integral operators that preserve the subordination and the superordination. Using the technique of *admissible functions* introduced by P. T. Mocanu and S. S. Miller, we obtained *sandwich-type* and some general *averaging (or mean-value)* operators. These new results extend a few of the previous classical results belonging to different authors, and moreover, some interesting applications obtained for appropriate choices are also given.

Thus, using the method given in [1], we gave some recent results about different classes of analytic integral operators that preserve the subordination and the superordination, in order to obtain *sandwich-type* and *modified (weighted) sandwich-type* results.

We obtained subordination and superordination preserving properties for the Saigo type generalized fractional differ-integral operator, defined for multivalent functions in the open unit disk [2]. Secondly, we give subordination and superordination preserving properties for the new defined generalized operator involving the *Srivastava-Attiya integral operator*; differential sandwich-type theorems for these univalent functions, and some consequences involving well-known special functions are also presented [3].

Further, we obtained the subordination and superordination preserving properties of certain nonlinear integral operators defined on the space of normalized analytic functions in the open unit disk, and the sandwich-type theorems for these integral operators are also presented [4]. Finally, we gave subordination, superordination and sandwich-preserving new theorems for certain integral operators that generalize some recently ones [5].

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