New Results in the Theory of Univalent Functions

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The lecture deals with some recent results in the theory of *Univalent Functions* obtained by using the general theory of differential subordinations, and it is connected with new results related to:

1. *Differential Sandwich-Type Results for Symmetric Functions Connected with a q-analogue Integral Operator*: some applications of the theory of differential subordination, differential superordination, and sandwich-type results for some subclasses of symmetric functions connected with a q-analogue integral operators;

2. *New Properties of the Generalized Dini Function*: some properties of the normalized form of generalized Dini function like close-to-convexity of some order and close-to-convex with respect to another convex function. Moreover, we investigate sufficient conditions which these functions are uniformly k-starlike functions of complex order b in the open unit disk, and some consequences of the main results;

3. *Pascal Distribution Series Connected with Certain Subclasses of Univalent Functions*: contains a connection between the Pascal distribution series and some subclasses of normalized analytic functions which coefficients are probabilities of Pascal distribution. For these functions, for linear combination of these functions and its derivatives, for operators defined by convolution products, and for the Alexander-type integral operator we find simple sufficient conditions such that these mapping belong to a general class of functions defined and studied by Goodman, Rønning, and Bharati et al.;

4. *Subordination and Superordination Preserving Properties for Families of Integral Operators for Meromorphic Functions*: deals with subordination, superordination, and sandwich-type results related to certain family of integral operators defined on the space of meromorphic functions in the open unit disk. Also, an application of the subordination and superordination theorems to the Gauss hypergeometric function are considered, and the main new results generalize some previously well-known sandwich-type theorems.