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MAJORIZATION PROBLEMS AND INCLUSION PROPERTIES FOR CERTAIN SUBCLASSES OF ANALYTIC FUNCTIONS DEFINED USING DIFFERENTIAL OPERATOR

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Abstract: In this paper, we introduce a new subclass $S^{p,q,s}_{\alpha,\beta,j}(\gamma)$ of certain analytic functions defined by a differential operator. A majorization problem for functions belonging to class $S^{p,q,s}_{\alpha,\beta,j}(\gamma)$ is considered. Moreover we point out some consequences of our main result. As well as using principal of subordination, we obtain inclusion properties of certain subclasses of analytic functions defined using that differential operator and inclusion properties of these classes involving the generalized integral operator.

Keywords and Phrases: Analytic functions, multivalent functions, differential subordinations, Hadamard product, differential operator, integral operator.

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1. Introduction

Let $\mathcal{A}_p$ denote the class of functions of the form

$$f(z) = z^p + \sum_{n=p+1}^{\infty} a_n z^n \quad (p \in \mathbb{N} := 1, 2, 3, \cdots) \tag{1.1}$$