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P-VALENTLY BAZILEVIČ FUNCTIONS DEFINED WITH HIGHER ORDER DERIVATIVES

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Dedicated to the memory of Professor Petru T. Mocanu (1931–2016)

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Abstract: The object of this paper is to derive various properties and characters for a class of p-valently Bazilevič functions defined with higher order derivatives. Using the technique of Briot-Bouquet differential subordination we obtained several results, some of them presented here generalize and improve a few earlier results, and several others are new ones involving differential inequalities. These last implications deal with the symmetric open disc and symmetric conic domains with respect to the real axe. Our results extends and improves many other previous ones, and some of them are the best possible under the given assumptions.

Keywords and Phrases: p-valent functions, Bazilevič functions, Gauss hypergeometric function, differential subordination, p-valently close-to-convex functions of order β, higher order derivative, Briot-Bouquet differential equations and differential subordinations.

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