Math 1931 − 2000:

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Koepf, Wolfram
On the Fekete-Szegoe problem for close-to-convex functions. II. (English)
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[For part I see Proc. Am. Math. Soc. 101, 89-95 (1987; reviewed above).]
Let C(β), $\beta \geq 0$, denote the family of normalized close-to- convex function of order β. (For $\beta = 1$ this is the usual class of close-to-convex functions as defined by Kaplan). In part I, the author found the sharp result for the functional $|a_3 - \lambda a_2^2|$ defined on the class C of Kaplan. In this paper, the author continues his investigations to the class C(β). We mention: Let $f \in C(\beta)$, and let S(f) denote

$$S(f) = \sup_{z \in D}(1 - |z|^2)^2 |S_f(z)|,$$

(S$_f(z)$ the Schwarzian derivative and D the unit disk) then

$$S(f) \leq \left\{ 2 + 4\beta, 2\beta^2 + 4\beta, \quad i f \quad \beta \leq 1 if \quad \beta \geq 1 \right.$$

and the results are sharp.

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Keywords : close-to-convex function; Schwarzian derivative

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Classification:

- 30C45 Special classes of univalent and multivalent functions
- 30C50 Coefficient problems for univalent and multivalent functions
- 30C70 Extremal problems for (quasi-)conformal mappings, variat. methods