ICM 1998, Berlin, Aug. 18–27

Abstracts of Short Communications and Posters

Section:

8. Analysis

1991 MS Classification: 30

Prokhorov, Dmitri, Saratov State University, Russia

Estimates of linear functionals for bounded univalent functions.

Let $S(M)$ be the class of functions $f(z) = z + a_2z^2 + \ldots$ holomorphic and univalent in the unit disk and such that $|f(z)| < M$. There are sharp and asymptotic estimates of linear functionals $\Re\sum_{k=2}^{n}\overline{\lambda}_k a_k$ in $S(M)$ if M is close to 1. The investigation methods are based on asymptotic expansions combined with the necessary extremum conditions (the maximum principle and transversality conditions) which appear also to be sufficient. Functional analysis methods are applied to estimate neighborhoods radii where the sharp coefficient inequalities hold.

Reference: D. Prokhorov, Coefficients of functions close to the identity function, *Compl. Var.* **33** (1997), 255-263.