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Koepf, Wolfram; Schmersau, Dieter

On the De Branges theorem. (English)

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The authors begin with a short summary of the history of the Bieberbach conjecture. P. Todorov [1992] and H. Wilf [1994] independently discovered an equation connecting the de Branges functions and the Weinstein functions. The authors give an elementary, purely algebraic proof of this equation. The last sentence from the authors' introduction summarizes the paper: "Therefore, in a very elementary manner it is shown that the known proofs of the Bieberbach and Milin conjectures can be understood as a consequence of the Loewner differential equation, plus properties of the Koebe function." It is interesting to note that MATHEMATICA played an important role in the discovery of one of the results in this paper.

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*Keywords* : Bieberbach conjecture; Milin conjecture; Loewner differential equation; generating functions

*Classification*:

- **30C50** Coefficient problems for univalent and multivalent functions
- **33C25** Orthogonal polynomials and functions
- **33C45** Orthogonal polynomials and functions of hypergeometric type
- **30C75** Extremal problems for (quasi-)conformal mappings, other methods