Mathematics > Complex Variables

The boundary Carathéodory-Fejér interpolation problem

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We give an elementary proof of a solvability criterion for the {\em boundary Carath\'{e}odory-Fej\'{e}r problem}: given a point $x \in \R$ and, a finite set of target values, to construct a function f in the Pick class such that the first few derivatives of f take on the prescribed target values at x. We also derive a linear fractional parametrization of the set of solutions of the interpolation problem. The proofs are based on a reduction method due to Julia and Nevanlinna.

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