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**Nonlinear Riemann-Hilbert Problems
and Boundary Interpolation**

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Abstract. We study properties of solutions to non-linear Riemann-Hilbert problems with smooth compact regularly traceable target manifold. The investigations focus on the dependence of solutions with positive winding numbers on additional parameters. While previous results investigated the behavior of the solutions inside the unit disk, we also pay attention to the boundary functions.

As an application we consider boundary interpolation problems involving solutions to Riemann-Hilbert problems. We generalize a result by Ruscheweyh and Jones about boundary interpolation with Blaschke products. It is also shown how solutions with winding number 1 can be determined by three given points on the target manifold.

Finally we formulate the problem of boundary interpolation with minimal winding number. It turns out that these problems form three subclasses, the well-posed problems constituting exactly one of them.

Keywords. Riemann-Hilbert problem, interpolation problem, normal family, boundary value problem.

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