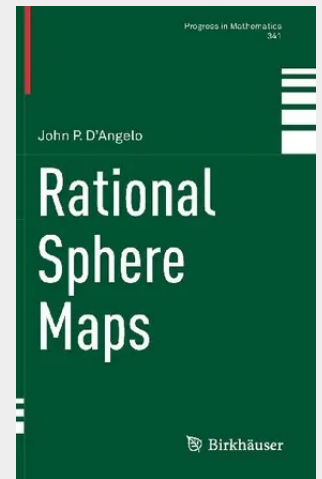


Rational Sphere Maps

This monograph systematically explores the theory of rational maps between spheres in complex Euclidean spaces and its connections to other areas of mathematics. Synthesizing research from the last forty years, the author aims for accessibility by balancing abstract concepts with concrete examples. Numerous computations are worked out in detail, and more than 100 optional exercises are provided throughout for readers wishing to better understand challenging material. The text begins by presenting core concepts in complex analysis and a wide variety of results about rational sphere maps. The subsequent chapters discuss combinatorial and optimization results about monomial sphere maps, groups associated with rational sphere maps, relevant complex and CR geometry, and some geometric properties of rational sphere maps. Fifteen open problems appear in the final chapter, with references provided to appropriate parts of the text. These problems will encourage readers to apply the material to future research. Rational Sphere Maps will be of interest to researchers and graduate students studying several complex variables and CR geometry. Mathematicians from other areas, such as number theory, optimization, and combinatorics, will also find the material appealing. See the author's research web page for a list of typos, clarifications, etc.: <https://faculty.math.illinois.edu/~jpda/research.html>

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