



# Introduction to the Optical Transfer Function (SPIE Press Monograph Vol. PM112)

*By Charles S. Williams, Orville A. Becklund*

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## **Introduction to the Optical Transfer Function (SPIE Press Monograph Vol. PM112) By Charles S. Williams, Orville A. Becklund**

Originally published by Wiley in 1989, this timeless classic provides a well-illustrated treatment of the fundamental concepts of spatial frequency, spread function, wave aberration, and transfer function--and how these concepts are related in an optical system, how they are measured and calculated, and how they may be useful.

### **Contents**

- OTF Historical Background
- Concepts
- Notation and Coordinates
- Diffraction Integral and Wave-Front Aberration Function
- Mathematical Theory of OTF
- Optical Design and Image Criteria
- Merit Functions and Aberration Balancing
- Measurement
- Calculation of the OTF: Analytical Methods
- Calculation of the OTF: Numerical Methods
- Appendix A: Calculated Optical Transfer Functions
- Appendix B: Some Mathematics
- Appendix C: Diffraction Integral Fundamentals
- Appendix D: Updated Calculations

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## Williams, Orville A. Becklund Bibliography

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## **Editorial Review**

From the Publisher

This timely publication brings together, in one source, a wealth of information on the optical transfer function. Treats fundamental concepts of spatial frequency, the spread function, wave aberration, and the transfer function. Then relates them to optical systems, including discussion of how they are measured and calculated, and their uses. Treatment is practical, and includes many illustrations.

## **Users Review**

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