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Nota di contenuto	1. Introduction. 1.1. Book plan -- 1.2. Introduction to Mellin transforms -- 1.3. Higher transcendental functions -- 2. Basic equations for wave propagation in turbulence. 2.1. Turbulence spectra -- 2.2. Rytov approximation. -- 2.3. Phase and log-amplitude variances -- 2.4. Power spectral density -- 2.5. Beam shape and Strehl ratio -- 3. Filter functions. 3.1. Circular aperture modes -- 3.2. Piston and tilt on an annulus -- 3.3. Finite apertures and focal anisoplanatism -- 3.4. Adaptive-optics systems -- 3.5. Structure function for a distributed beacon -- 3.6. Developing new variance filter functions -- 4. Zero-parameter problems. 4.1. Turbulence models and moments -- 4.2. Tilt and piston for collimated and focused beams -- 4.3. Gradient tilt -- 4.4. Difference between gradient and Zernike tilt -- 4.5. Zernike mode variance. -- 4.6. Piston and tilt of a gaussian beam -- 4.7. Beam movement at a target -- 4.8. Angle-of-arrival jitter -- 4.9. Scintillation for collimated and focused beams -- 4.10. Phase variance with finite servo bandwidth -- 4.11. Variances for beams corrected by adaptive optics.

5. Integral evaluation with Mellin transforms. 5.1. Integral evaluation with one parameter. -- 5.2. Asymptotic solutions -- 5.3. Multiple poles -- 6. Examples with a single positive parameter. 6.1. Zernike modes and tilt for the von Karman spectrum -- 6.2. Tilt for the Greenwood spectrum -- 6.3. Tilt with finite inner scale -- 6.4. Piston- and tilt-removed phase variance on an annulus -- 6.5. Effect of diffraction on tilt -- 6.6. Tilt anisoplanatism -- 6.7. Power spectral density of tilt -- 6.8. Scintillation with finite apertures and sources -- 6.9. Scintillation with finite inner scale -- 6.10. Scintillation anisoplanatism -- 6.11. Focus anisoplanatism. -- 6.12. Zernike anisoplanatism -- 6.13. Focal anisoplanatism for point sources -- 6.14 Focal anisoplanatism for distributed sources -- 6.15 Focal anisoplanatism for offset sources -- 7. Strehl ratio. -- 7.1. Strehl ratio for propagation through turbulence -- 7.2. Strehl ratio with beam jitter -- 7.3. Strehl ratio with anisoplanatism -- 7.4. Strehl ratio for various anisoplanatic effects -- 7.5. Strehl ratio using numerical integration. -- 8. Mellin transforms with a complex parameter -- 8.1. Mellin-Barnes integrals with complex parameters -- 8.2. Asymptotic results with a complex parameter -- 8.3. The Mellin transform of an exponential times a Bessel function. 9. finite beam characteristics as examples with a single complex parameter -- 9.1. Phase and log-amplitude variances of beam waves -- 9.2. Power spectral density of beam waves -- 9.3. Scintillation on beam waves -- 9.4. Heuristic scintillation formulas -- 10. Mellin transforms in n complex planes -- 10.1. Convergence of multi-parameter series -- 10.2. Path closure at infinity -- 10.3. Integration in multiple complex planes -- 10.4. Asymptotic solution in two or more complex planes -- 11. integral evaluation with n parameters -- 11.1. An integral with two Bessel functions and a sinusoid -- 11.2. An integral with three Bessel functions -- 11.3. Example in three and n complex planes -- 11.4. Effect of outer scale on tilt anisoplanatism -- 11.5. Tilt with inner and outer scale -- 11.6. Power spectrum of tilt with outer scale -- 11.7. Structure and correlation functions with inner and outer scales -- 12. Beam shape -- 12.1. General formula for beam shape. -- 12.2. Beam shape for uncorrected turbulence -- 12.3. Beam shape with tilt jitter -- 12.4. Beam shape with anisoplanatism -- Appendix A: Additional Mellin transforms -- Appendix B: Transcendental functions -- Index.

Sommario/riassunto

At first glance, Mellin transforms can look formidable and complicated. With this book, Dr. Richard Sasiela invites readers to overcome these fears and see just how useful they can be. The book is aimed at two audiences: those interested in problems surrounding electromagnetic wave propagation in turbulence, and those interested in evaluating integrals. The author takes a systematic and in-depth approach to answering both audiences, separately and jointly, by demonstrating a way to obtain analytic answers, the integration method, and by developing a way to express solutions to electromagnetic wave propagation in turbulence problems in integral form. The book also demonstrates how Mellin transform techniques can be used to evaluate these integrals. This book touches on how Mellin transforms can be used in applications relating to image, radar, and acoustic processing, as well as chaos and fractal theory. The author has thoroughly updated this second edition and corrects some of his earlier work using new information and new technologies. He has also added new information on Strehl ratios and their different applications.