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Nota di contenuto	Front matter -- Contents -- List of abbreviations -- List of notations -- 1 Introduction -- 2 Fiber ring interferometry based on the Sagnac effect (literature review) -- 3 Development of the theory of linear interaction (random coupling) between polarization modes in single-mode optical fibers -- 4 Experimental study of random coupling between polarization modes in single-mode optical fibers -- 5 Fiber ring interferometers of minimum configuration -- 6 Fiber ring interferometers of nonstandard configuration -- 7 Geometric phases in optics. Application of the Poincaré sphere method for determining a zero shift in fiber ring interferometers -- 8 Time-dependent, nonlinear, and magnetic effects and methods for removing their influence on the zero shift in FRIs -- 9 Relativistic effects in optical and non-optical ring interferometers, Sagnac rotation sensors. Potentials of ring interferometers in determining new fundamental effects -- 10 Conclusion -- Index -- Back matter
Sommario/riassunto	This monograph is devoted to the creation of a comprehensive formalism for quantitative description of polarized modes' linear interaction in modern single-mode optic fibers. The theory of random

connections between polarized modes, developed in the monograph, allows calculations of the zero shift deviations for a fiber ring interferometer. The monograph addresses also the Sagnac effect and the Thomas precession. Devices such as gyroscopes, used in navigation and flight control, work based on this technology. Given the ever increasing market for navigation and air traffic, researchers and practitioners in research and industry need a fundamental and sound understanding of the principles. This work presents the underlying physical foundations.