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Nota di contenuto	Dedication -- Preface -- Chapter 1: Introduction -- Chapter 2: Introduction to Spherical Elementary Current Systems -- Chapter 3: Spherical Elementary Current Systems applied to Swarm data -- Chapter 4: Local least squares analysis of auroral current structures in multi-spacecraft data -- Chapter 5: Multi-spacecraft current estimates at Swarm -- Chapter 6: Applying the dual-spacecraft approach to the Swarm constellation for deriving radial current density. Chapter 7: Science data products for AMPERE -- Chapter 8: ESA Field Aligned Currents - Methodology Inter-Comparison Exercise -- Chapter 9: Spherical Cap Harmonic Analysis techniques for mapping high-latitude

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Chapter 10: Recent Progress on Inverse and Data Assimilation
Procedure for High-Latitude Ionospheric Electrodynamics -- Chapter
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magnetic measurements -- Chapter 12. Models of the main
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Sommario/riassunto

This open access book provides a comprehensive toolbox of analysis techniques for ionospheric multi-satellite missions. The immediate need for this volume was motivated by the ongoing ESA Swarm satellite mission, but the tools that are described are general and can be used for any future ionospheric multi-satellite mission with comparable instrumentation. In addition to researching the immediate plasma environment and its coupling to other regions, such a mission aims to study the Earth's main magnetic field and its anomalies caused by core, mantle, or crustal sources. The parameters for carrying out this kind of work are examined in these chapters. Besides currents, electric fields, and plasma convection, these parameters include ionospheric conductance, Joule heating, neutral gas densities, and neutral winds. .
