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Nota di contenuto	1. Introduction -- 2. Context -- 3. Why moving plates? -- 4. Solid, yielding mantle -- 5. Convection -- 6. The plate mode of convection -- 7. The plume mode of convection -- 8. Perspective -- 9. Evolution and tectonics -- 10. Mantle chemical evolution -- 11. Assimilating mantle convection into geology -- Appendix A. Exponential growth and decay -- Appendix B. Thermal evolution details -- Appendix C. Chemical evolution details.
Sommario/riassunto	Mantle convection is the fundamental agent driving many of the geological features observed at the Earth's surface, including plate tectonics and plume volcanism. Yet many Earth scientists have an incomplete understanding of the process. This book describes the

physics and fluid dynamics of mantle convection, explaining what it is, how it works, and how to quantify it in simple terms. It assumes no specialist background: mechanisms are explained simply and the required basic physics is fully reviewed and explained with minimal mathematics. The distinctive forms that convection takes in the Earth's mantle are described within the context of tectonic plates and mantle plumes, and implications are explored for geochemistry and tectonic evolution. Common misconceptions and controversies are addressed - providing a straightforward but rigorous explanation of this key process for students and researchers across a variety of geoscience disciplines.
