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Mantle Dynamics and the D<sup>''</sup> Layer: Impacts of the Post Perovskite Phase  
Influence of the Post-Perovskite Transition on Thermal and Thermo-Chemical Mantle Convection; The Dynamical Influences From Physical Properties in the Lower Mantle and Post-Perovskite Phase Transition; Deformation-Induced Mechanical Instabilities at the Core-Mantle Boundary

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Sommario/riassunto

Published by the American Geophysical Union as part of the Geophysical Monograph Series, Volume 174. Discovery of the perovskite to post-perovskite phase transition in MgSiO<sub>3</sub>, expected to occur for deep mantle conditions, was first announced in April 2004. This immediately stimulated numerous studies in experimental and theoretical mineral physics, seismology, and geodynamics evaluating the implications of a major lower mantle phase change. A resulting revolution in our understanding of the D<sup>''</sup> region in the lowermost mantle is well underway. This monograph presents the

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