



buildings



Special Issue Reprint

Research on the Seismic Design of Steel Frames

www.mdpi.com/books/reprint/11324

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ISBN 978-3-7258-4839-3 (Hardback)
ISBN 978-3-7258-4840-9 (PDF)



This Reprint brings together recent research addressing the seismic performance of steel and composite structures, with a particular focus on structural connections, retrofitting techniques, and system-level behavior. The collection includes studies on box-strengthened panel zones, end-plate connections involving weak-axis columns, and the out-of-plane deformation effects in column bases. Innovative reinforcement strategies, such as knee braces with high-hardness vises and U-shaped connectors, are examined for their contribution to aseismic resilience. Advances in cold-formed steel shear walls and circular CFST columns are also highlighted. Furthermore, the optimization of damping systems in cable-stayed bridges using surrogate modeling reflects the integration of computational intelligence in seismic design. Together, these works provide valuable insights into improving the reliability, safety, and efficiency of steel and composite structures under seismic loading, offering both experimental and numerical perspectives that support future design developments and engineering practices.



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