

# Co-phase Traction Power Supply with Railway Hybrid Power Quality Conditioner

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## Abstrak

This book offers a brief review of and investigations into the power quality problem in the new technology of co-phase high-speed traction power supplies, which benefits for higher locomotive speed. In addition, it presents detailed design procedures and discusses the chief concerns in connection with a newly proposed solution: compensation in co-phase traction power using a co-phase railway hybrid power quality conditioner (Railway HPQC). Further, it provides essential information on the modeling of power quality in co-phase, high-speed traction power supplies, and on power quality compensation algorithm derivations. Lastly, it delineates the design of railway HPQC and analyzes the effect of different parameters on its performance to accommodate different priorities. All design is supported by simulations and the results of experimental verification.