Qeios

Peer Review

Review of: "TransCapAI: An Optimization Framework for Series Capacitor Allocation to Improve Efficiency and Voltage Stability in Transmission Systems using Machine Learning Techniques"

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What is the primary novelty of TransCapAI compared with existing ML-based capacitor placement and PSO/TCSC optimization methods?

No mathematical problem formulation is shown anywhere.

The paper claims that TransCapAI provides **adaptive and data-driven transmission planning**. However, the study uses a single IEEE test system. What evidence supports the claim of adaptability?

What constraints prevent the optimization algorithm from producing mathematically optimal but **physically impractical capacitor configurations**?

TransCapAI reduces active power losses from **27.86375 MW to 16.02032 MW**, corresponding to approximately **42.5% reduction**. Is this improvement statistically significant or simply the result of the selected operating conditions?

Result justification needs improvement.

Declarations

Potential competing interests: No potential competing interests to declare.

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