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**Constructing polyhedral restrictions of steady-state feasibility regions**

The electric grid is facing major challenges, mainly caused by the accelerating energy transition and active adoption of renewable generation. This leads to network capacity shortages for both generation and demand in electricity grids that need to be addressed and controlled. Managing the daily operation of the grid requires accurate modeling of power flows and fast ways to compute optimal power flows (OPF), satisfying all physical and operational constraints. Therefore, we show sufficient conditions for the existence of at least one feasible solution to all constraints that can be quickly checked or even more importantly, enforced in optimization problems.