Correction to "A Congestion Alleviation Technique Exploiting Structural Insights on the Interaction of Line Loading Limits, Reactance and Line Outage Security Constraints"

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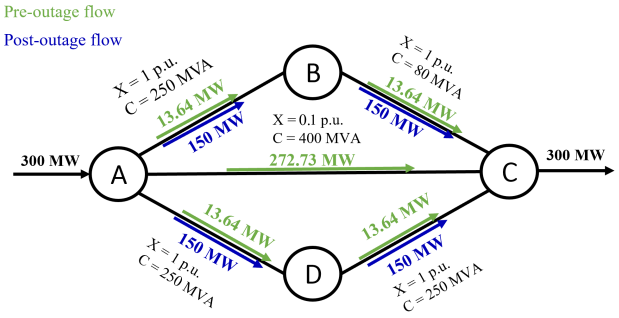
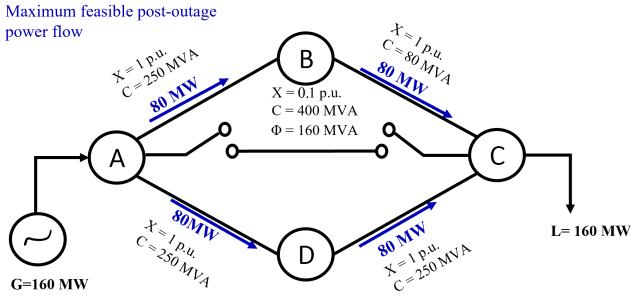


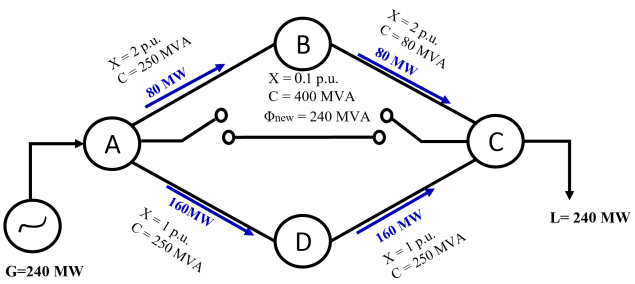
Fig. 1. An example power transaction from node A to C: in the **post-outage** situation, the power divides evenly between the upper and lower paths due to their equal total reactance, even though the capacity bottleneck at $B \rightarrow C$ cannot accommodate such a large share of the redistributed power

The authors regret that the published manuscript contains a typographic error in labelling a reactance value for a particular line in both Fig. 1 and Fig. 2 of the original manuscript. In both of these cases, the reactance of the line $A \rightarrow C$ should be labelled as 0.1 pu. The other lines in these diagrams should be annotated with reactances of 1 pu but the central line $A \rightarrow C$ should be 0.1 pu.

These figures are provided here without these misleading typographic errors.



(a) Before adding the extra fixed reactances, the maximum feasible **power flow** from A to C is 160 MW, which loads the line $B \rightarrow C$ to its limit of 80 MVA



(b) After adding the extra fixed reactances the injection G and withdrawl L can be brought to a value of 240 MW before congestion occurs at $B \rightarrow C$

Fig. 2. A notional example to show how the power transaction from A to C can be modelled with a fictitious paired generator and load. Adding reactances to the upper path allows the magnitude of this transaction to be maximised to a higher value: this is exactly equivalent to increasing the shadow capacity of $A \rightarrow C$

References

[1] A. Beiranvand and P. Cuffe, "A congestion alleviation technique exploiting structural insights on the interaction of line loading limits, reactance and line outage security constraints," *IEEE Transactions on Power Systems*, vol. 38, no. 4, pp. 3719–3732, 2023.

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