

Accepted Manuscript

Electrical And Topological Drivers Of The Cascading Failure Dynamics In Power Transmission Networks

Alberto Azzolin , Leonardo Dueñas-Osorio , Francesco Cadini , Enrico Zio

PII: S0951-8320(16)31035-3
DOI: [10.1016/j.res.2018.03.011](https://doi.org/10.1016/j.res.2018.03.011)
Reference: RESS 6093



To appear in: *Reliability Engineering and System Safety*

Received date: 30 December 2016
Revised date: 9 February 2018
Accepted date: 3 March 2018

Please cite this article as: Alberto Azzolin , Leonardo Dueñas-Osorio , Francesco Cadini , Enrico Zio , Electrical And Topological Drivers Of The Cascading Failure Dynamics In Power Transmission Networks, *Reliability Engineering and System Safety* (2018), doi: [10.1016/j.res.2018.03.011](https://doi.org/10.1016/j.res.2018.03.011)

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Highlights:

- Slightly increasing line redundancy and decentralizing generators are effective for reducing load shedding and line failures
- Better line redundancy and generator decentralization also reduce uncertainty in cascading failure consequences
- Optimal power re-dispatch successfully manages cascading failures in all considered power grid configurations
- Coupling synthetic yet realistic power grids with direct current (DC) cascading failure simulators supports planning against cascading failures

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