

Case studies of extreme values of residual load.

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Motivation

- Rapidly growing share of renewables in Germany -> accurate wind and solar power forecasts are necessary for balancing the power grid.
- $ResLoad = Demand - (Wind + Solar)$

Methodology

- Dunkelflaute (DF) comes from German, means dark and calm
- DF events have been widely studied in the past
- Hellbrise (HB) is a made up word, means bright and breeze
- HB events are new and sensitive to the fast increasing renewable share in Germany -> too much renewables production, too low energy demand

Conclusion

- HB events occur both in summer and winter
- HB events can be both wind only and wind+solar driven
- DF events are mostly wind+temperature driven

