**DRA’s Partisan Methodology**

We implemented a version of John Nagle’s method for evaluating the partisan characteristics of maps. It takes in a map described in terms of the statewide two-party Democratic vote share and the district-by-district two-party Democratic vote shares for an election (sometimes called a “partisan profile”), estimates the corresponding fractional Democratic seat probability,[[1]](#footnote-1) infers a seats­–votes curve using proportional shift, and finally calculates many metrics.

Diagram, text

Description automatically generated

The core process outlined above works with a single election. To evaluate a map using multiple elections, you have two choices:

1. Analyze the map for each election individually and then combine (average) the results, or
2. Combine (average) the elections into a composite election and then analyze the map for that

To keep our user experience simple for a mass audience[[2]](#footnote-2) and to substantially reduce data download costs,[[3]](#footnote-3) we chose the latter approach. We averaged six elections from 2016–2020 to create a default election composite:[[4]](#footnote-4)

* The last two Presidential elections
* The last two US Senate elections, and
* The most recent Gubernatorial and state Attorney General elections

The composite is a proxy of future voting behavior based on past voting behavior. Advanced users can also analyze maps using individual elections one a time.

[end]

1. For details, see https://lipid.phys.cmu.edu/nagle/Technical/FractionalSeats2.pdf. [↑](#footnote-ref-1)
2. We have ~20,000 users. [↑](#footnote-ref-2)
3. By downloading just one election, our download costs for election data are 1/6th of downloading all six. [↑](#footnote-ref-3)
4. For more, see “Election Composites” @ https://medium.com/dra-2020/election-composites-13d05ed07864. [↑](#footnote-ref-4)