# Node support efficacy in Congreve & Lamsdell matrices

# $Martin\ R.\ Smith\ martin.smith@durham.ac.uk$ 2018-12-20

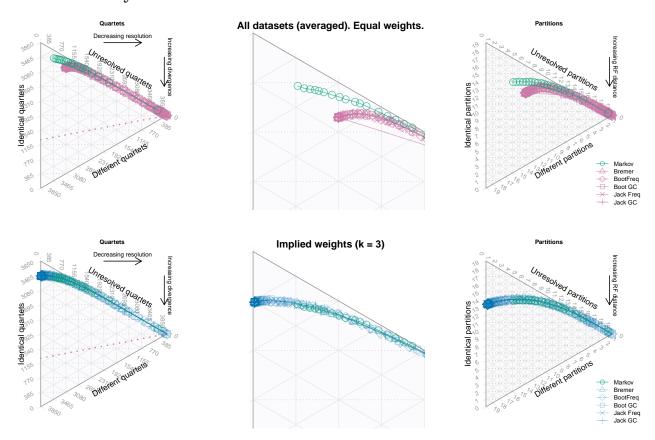
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This page depicts the analytical results of all 100 matrices generated by Congreve & Lamsdell [1] using a ternary plotting approach [2], with quartets and partitions used as distance metrics.

The most highly resolved tree is progressively reduced by collapsing nodes with a support value below an increasing threshold.

### 0.1 Summary



Though the Bootstrap GC metric systematically produces the lowest normalized tree distances (SD/MaxI), it is not significantly better than other methods. The following table reports P values that fail to reject the null hypothesis that the specified node support metric is equally good at ascribing incorrect nodes the lowest support values.

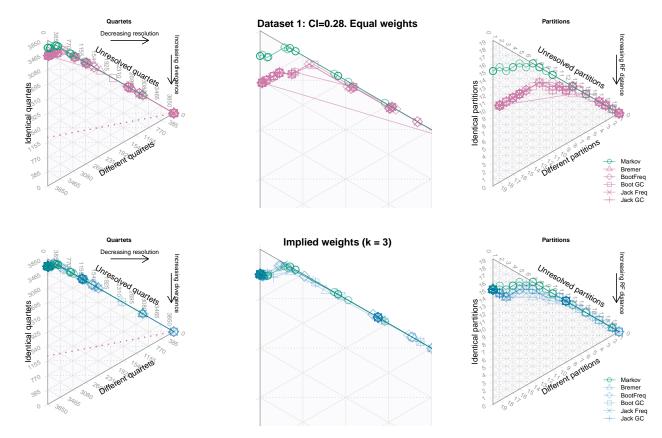
	eq	k1	k2	k3	k5	kX	kC
Bootstrap GC	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000
Bootstrap Freq	0.9840650	0.9915189	0.9934145	0.9760370	0.9485781	0.9615921	0.9720185
Jackknife GC	0.9888177	0.9995312	0.9331647	0.9599348	0.9637166	0.9268107	0.9743023
Jackknife Freq	0.9942934	0.9554285	0.9509308	0.9839102	0.8639063	0.9408796	0.9723566
Bremer	0.4347916	0.3324499	0.5075762	0.4474386	0.3405988	0.2397081	0.8365157

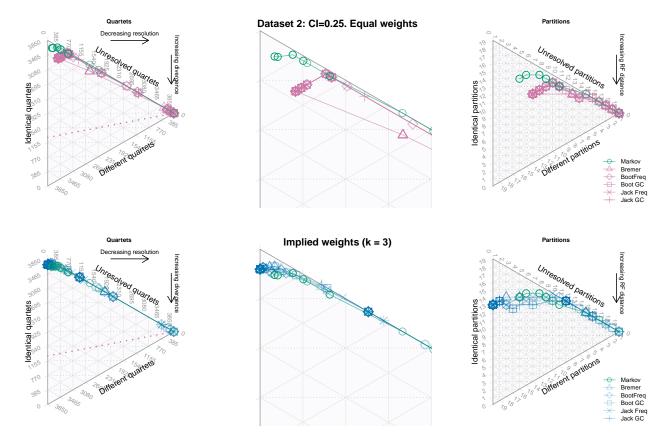
#### 0.2 Trees 1–10

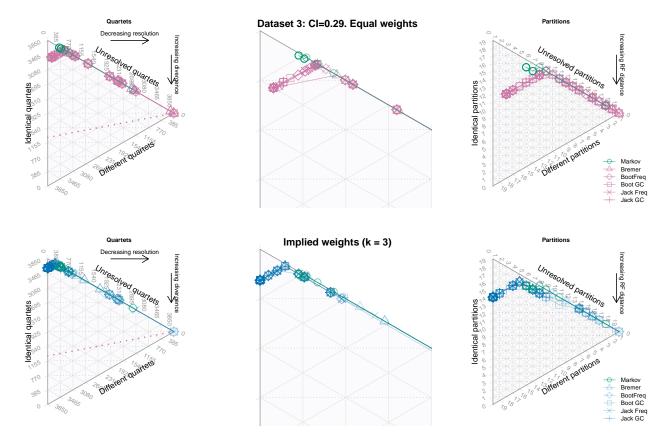
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## Warning in Sys.setlocale("LC_ALL", "English_United Kingdom.1252"): OS
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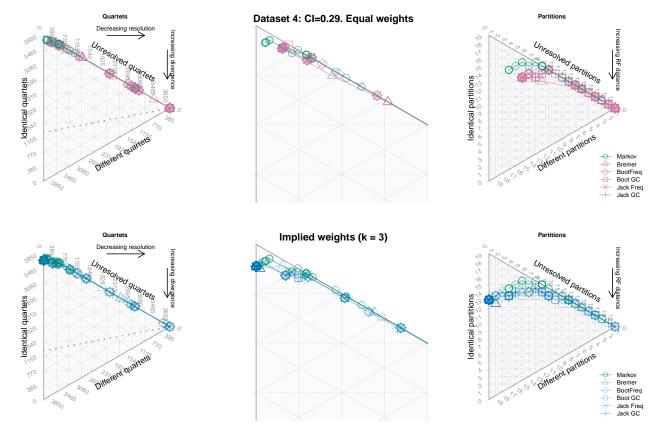
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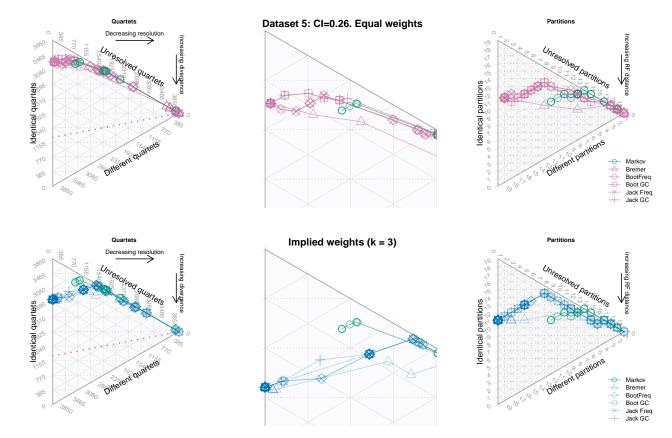


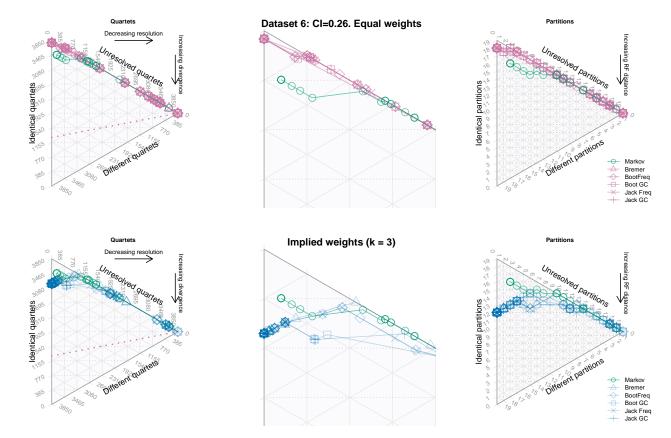


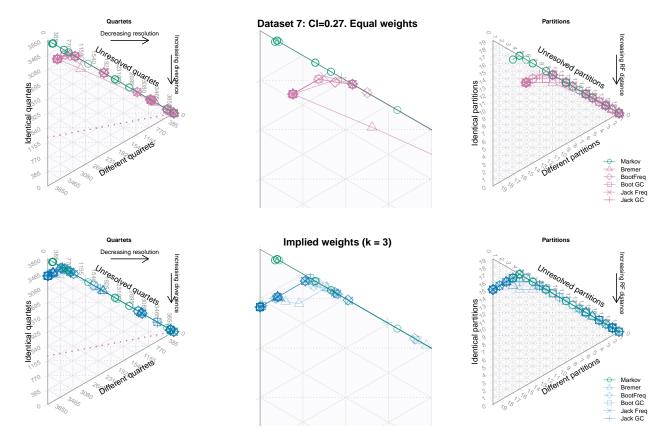


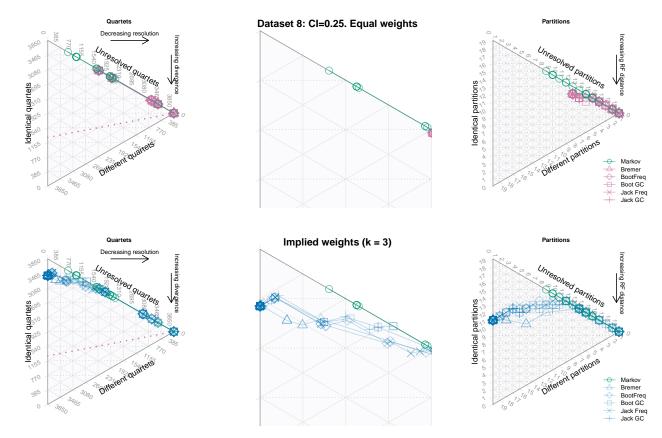


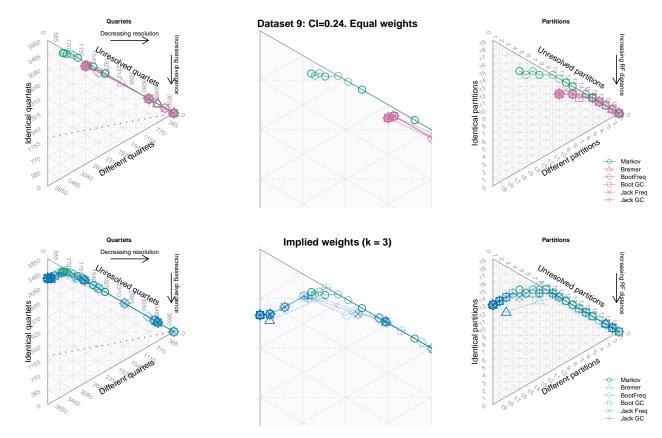
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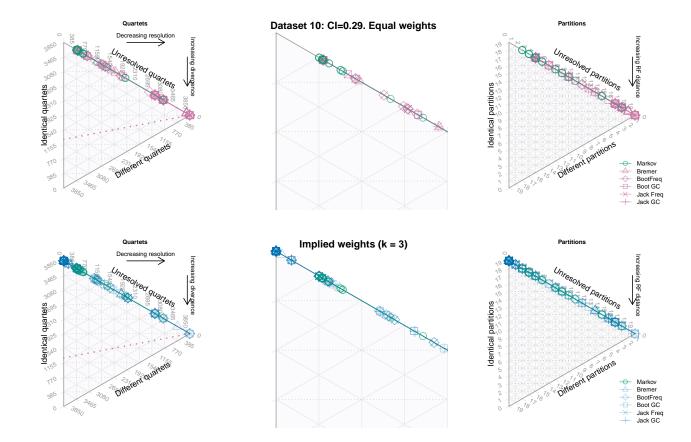




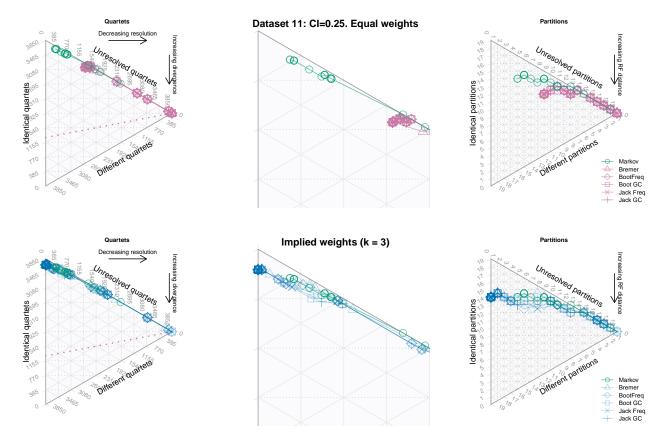


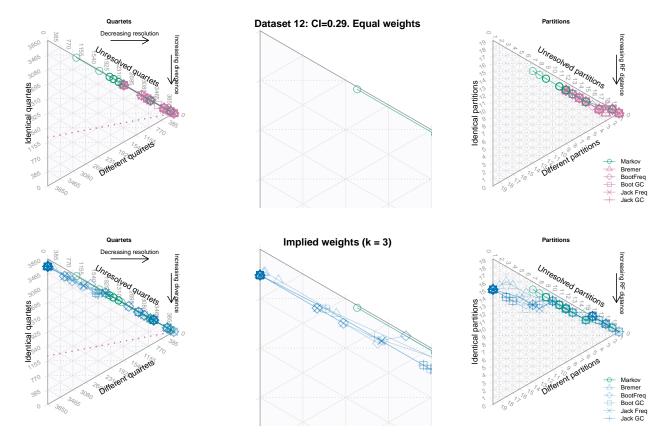


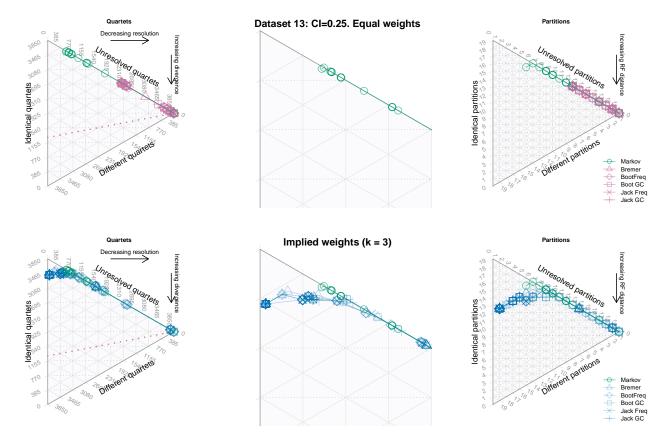


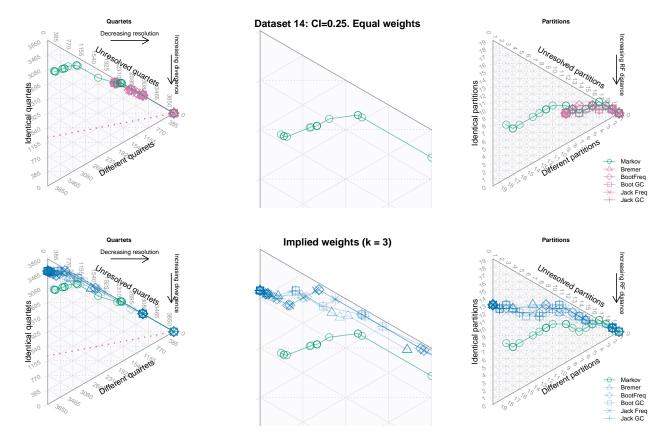


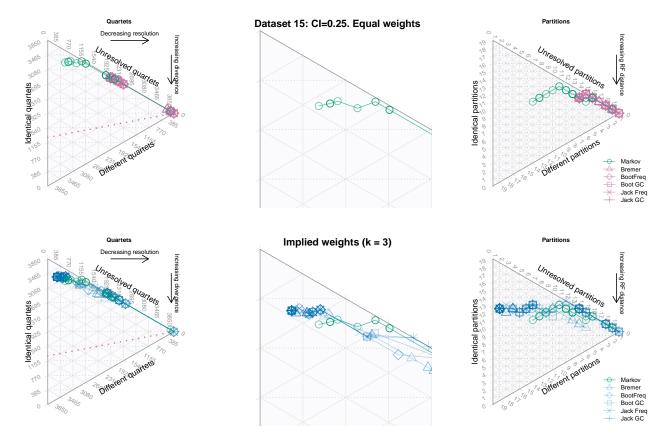
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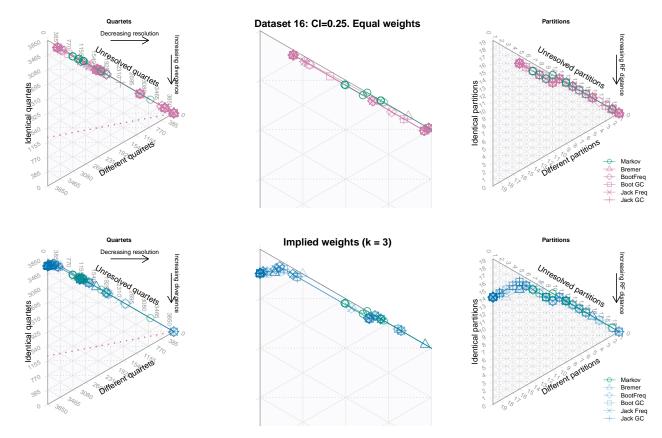


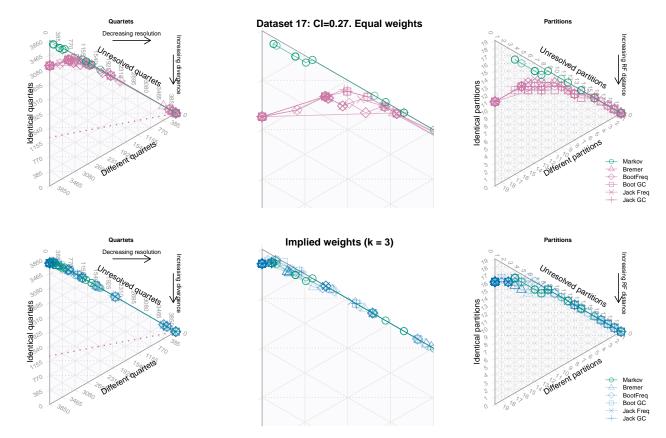


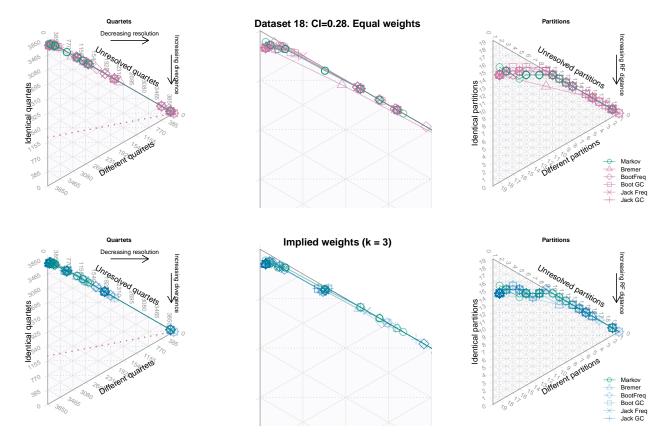


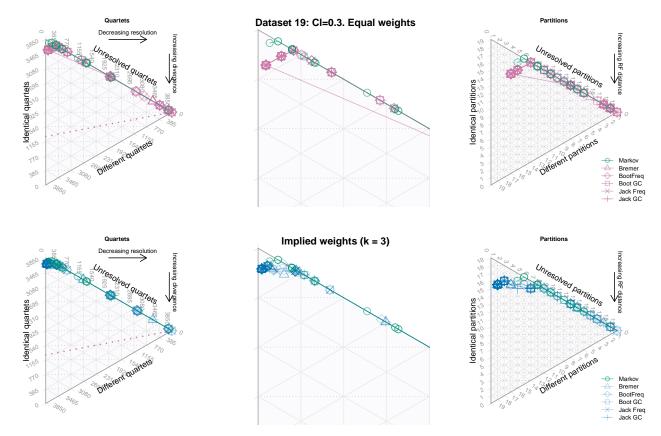




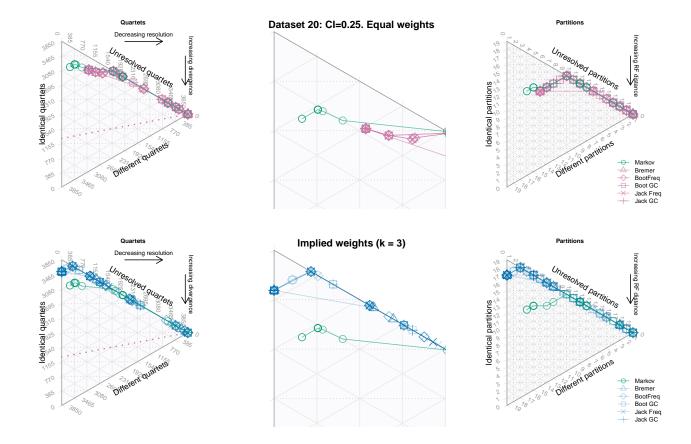




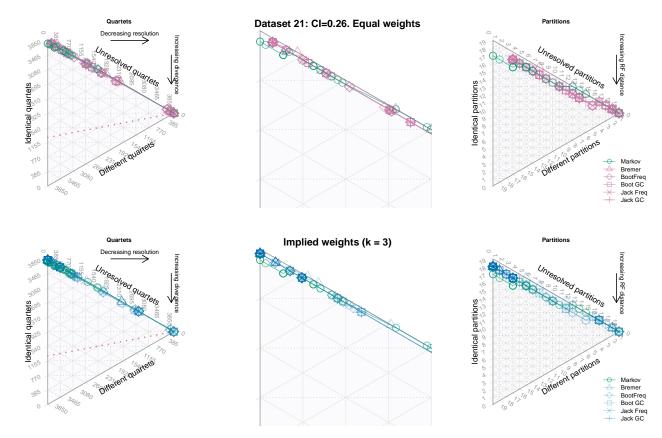


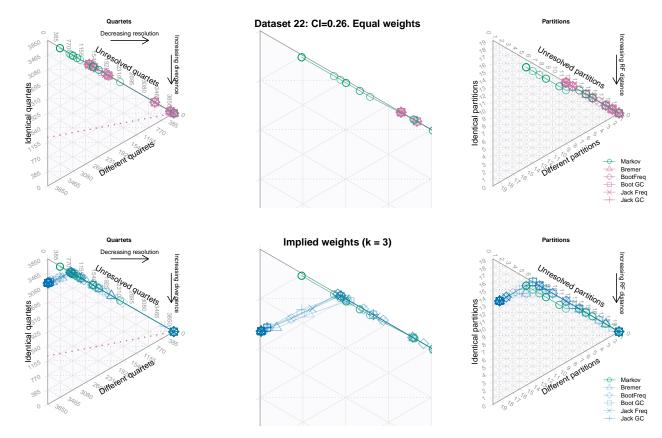


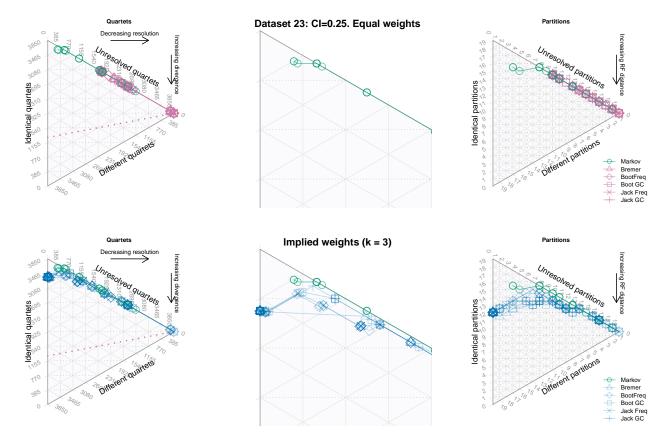
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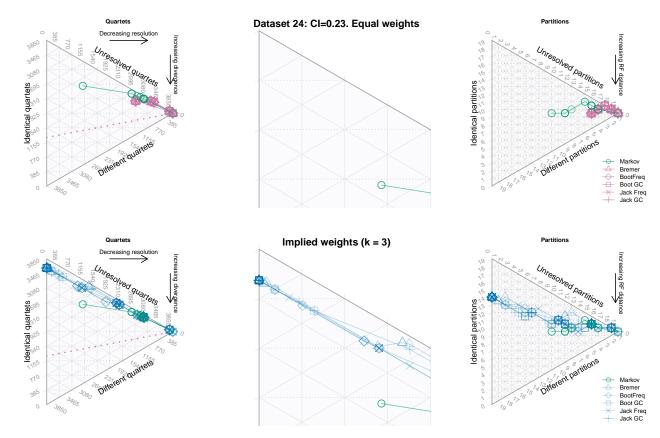


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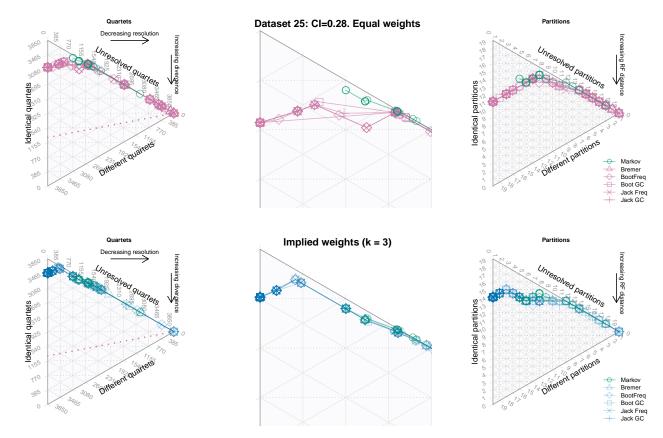


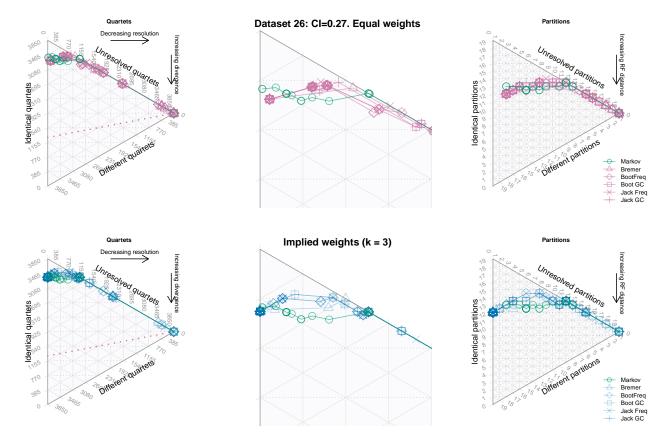


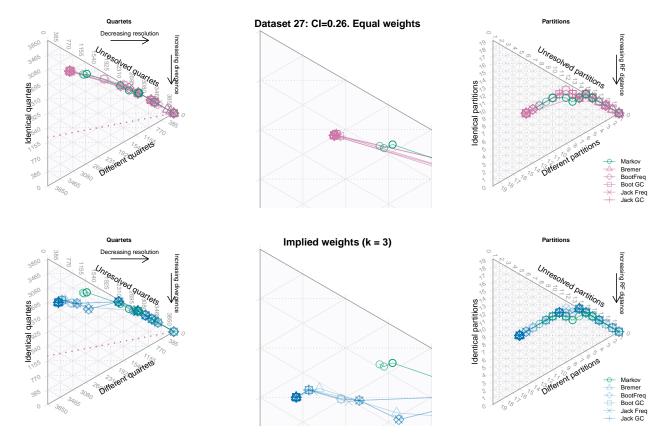


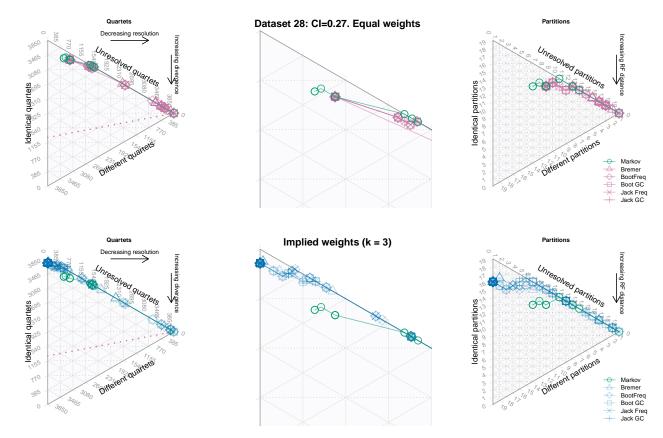


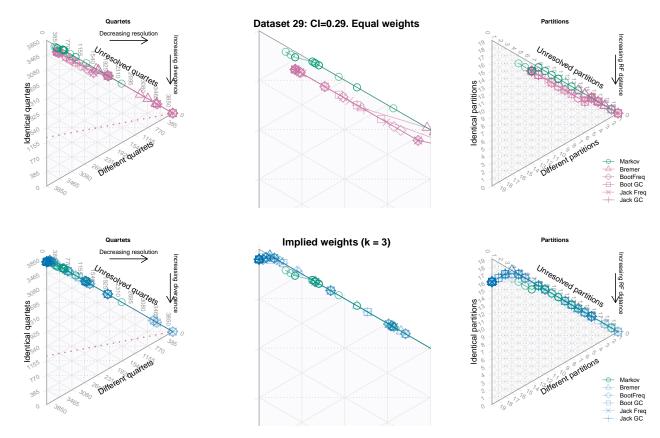
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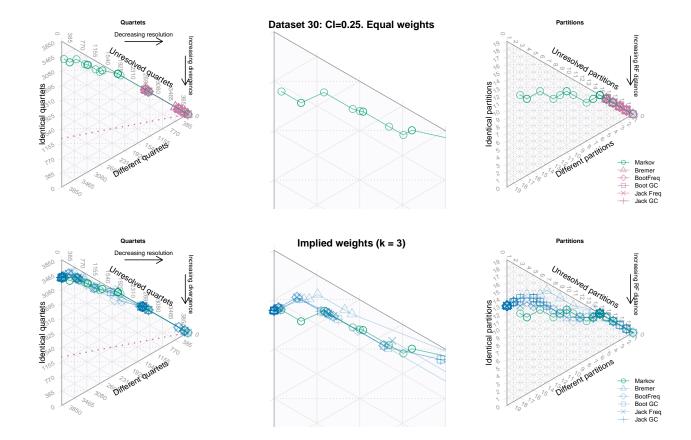




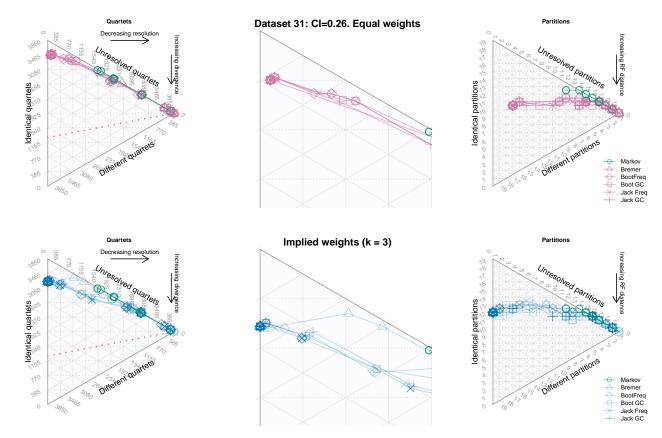


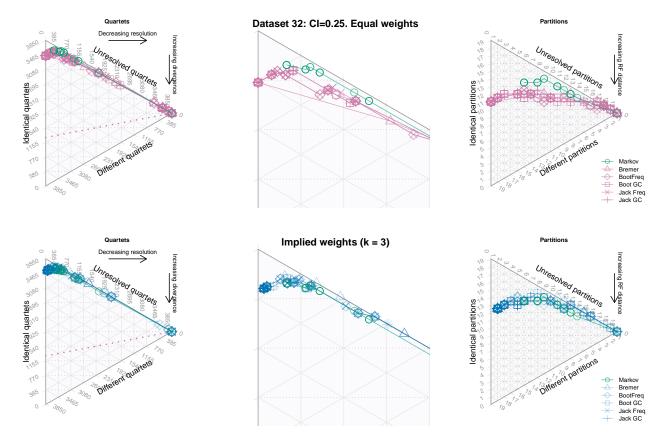


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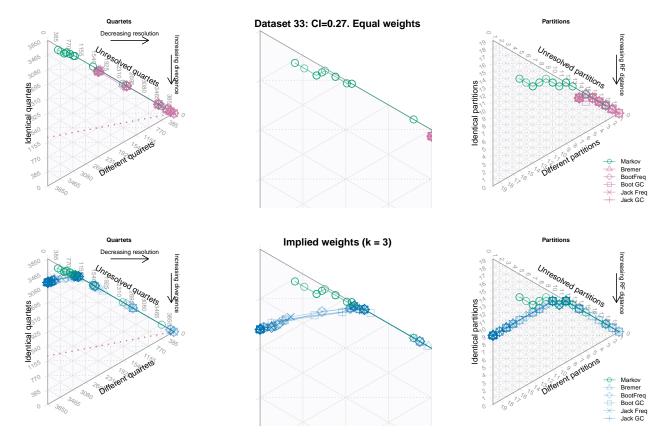


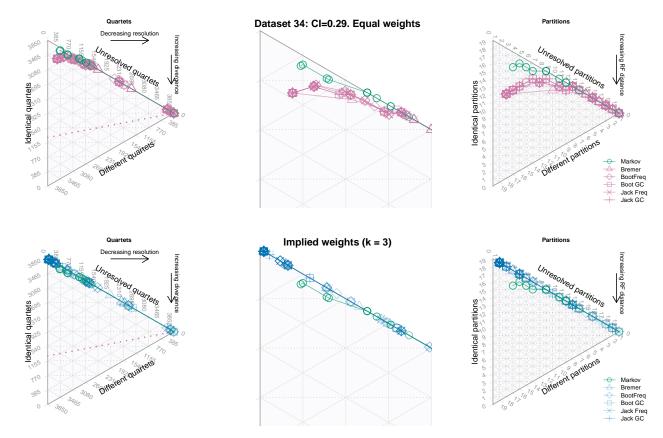
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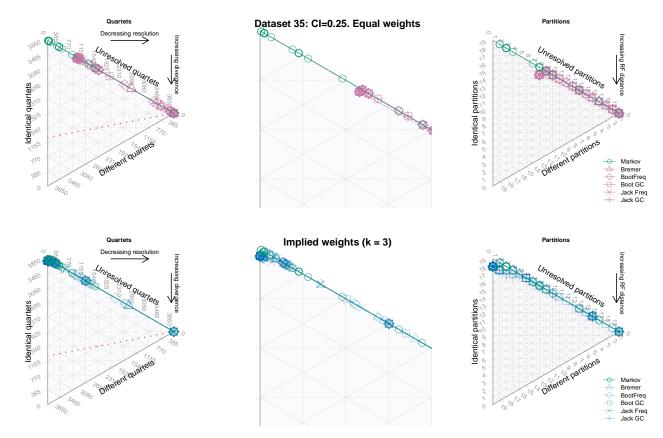


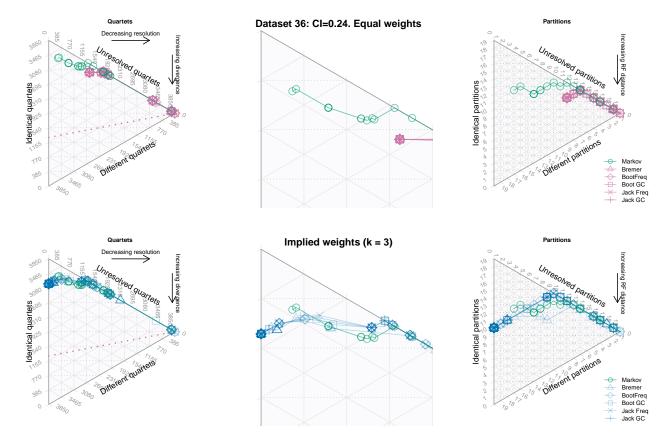


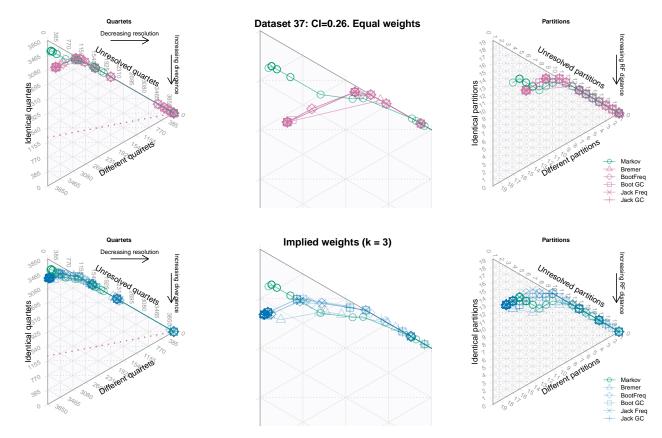
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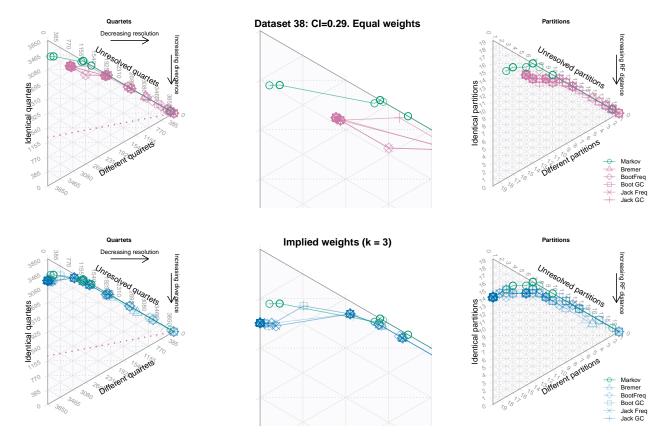


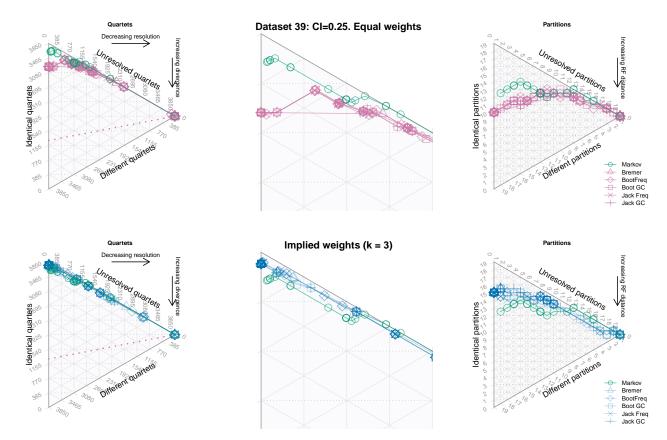


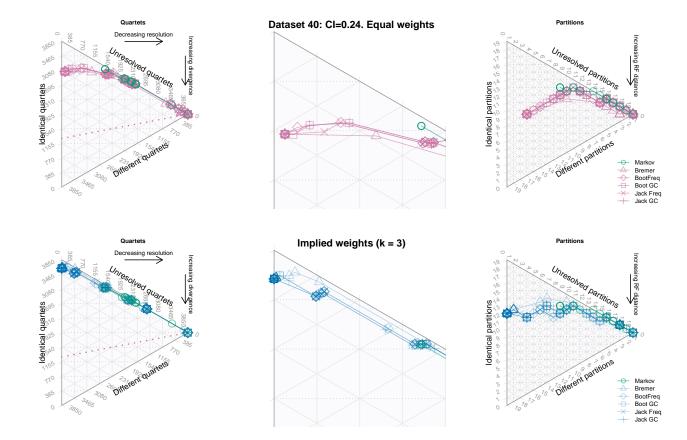




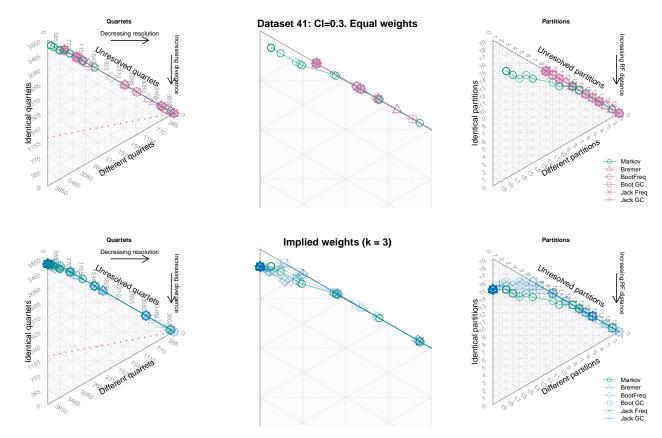


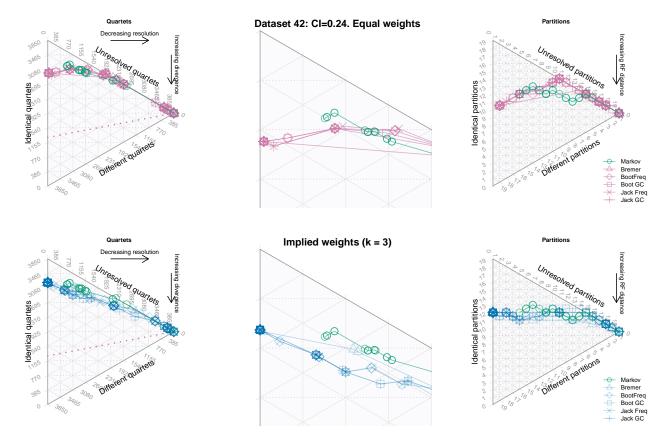


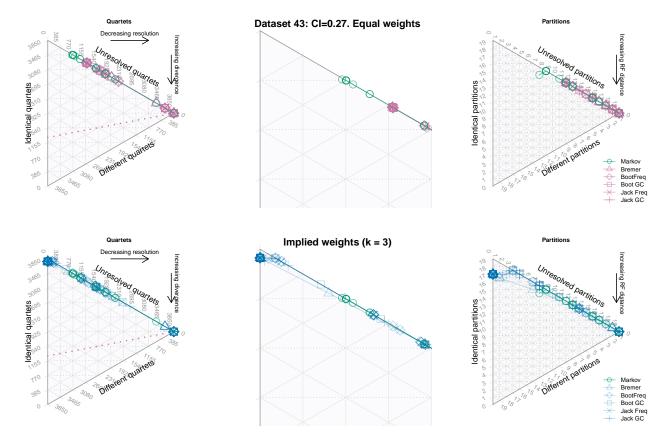


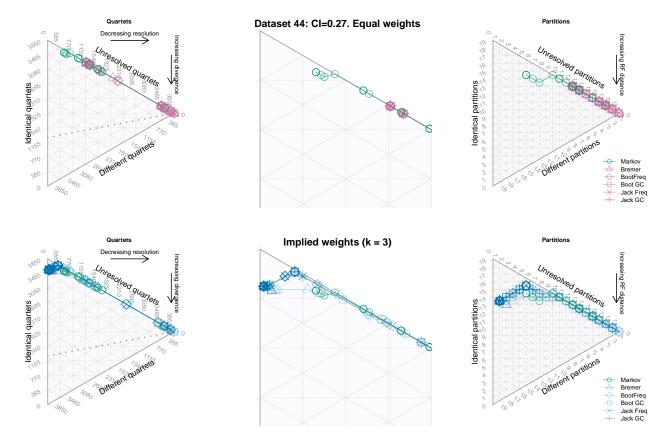


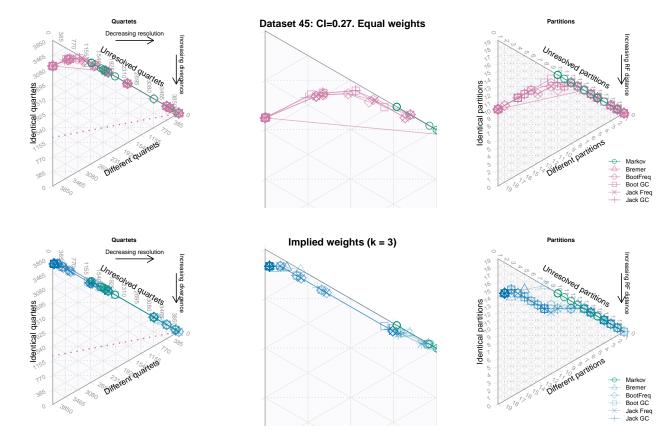
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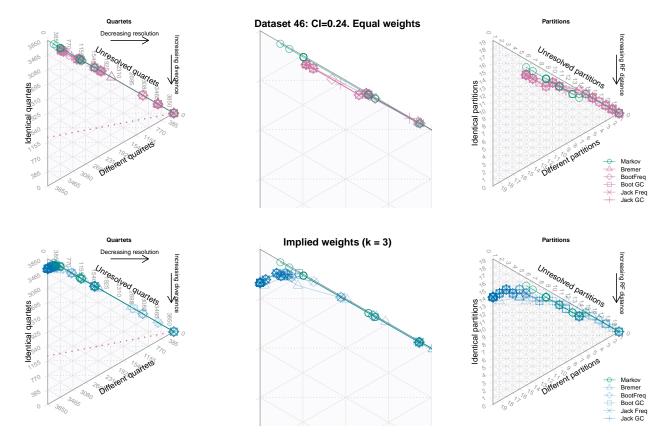


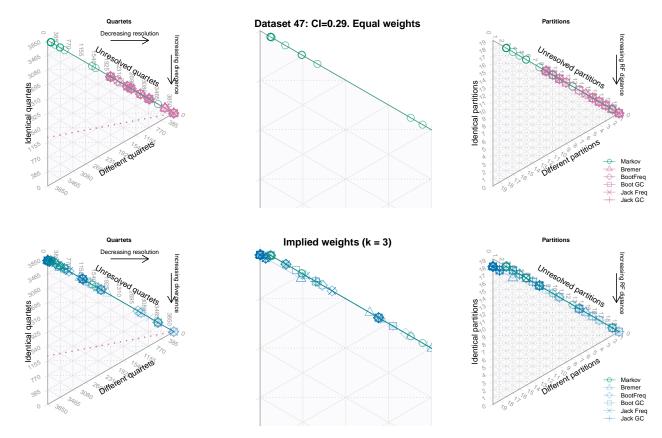


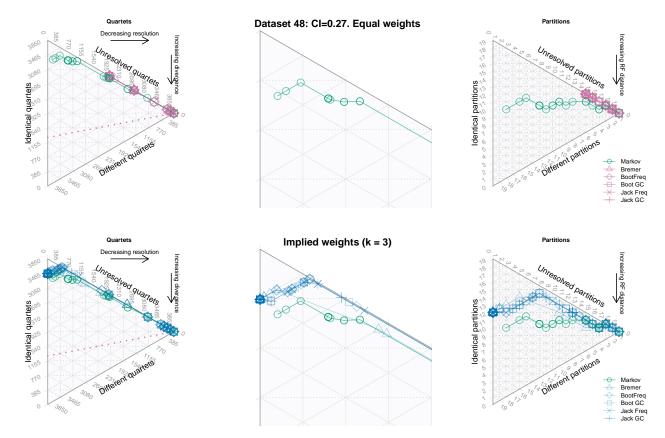




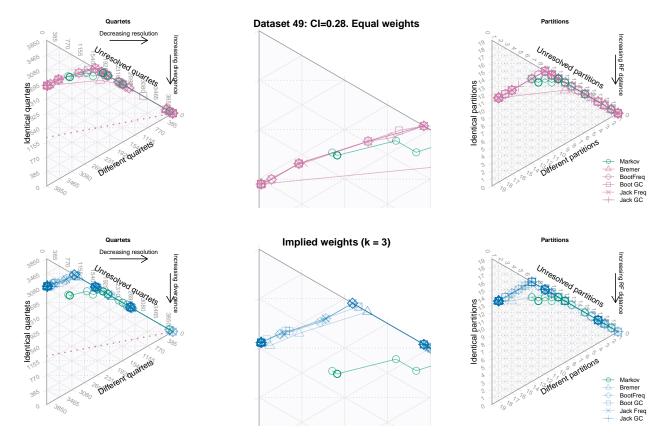


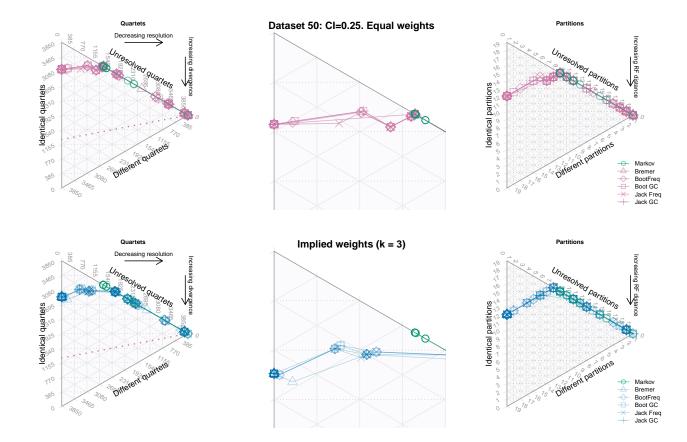




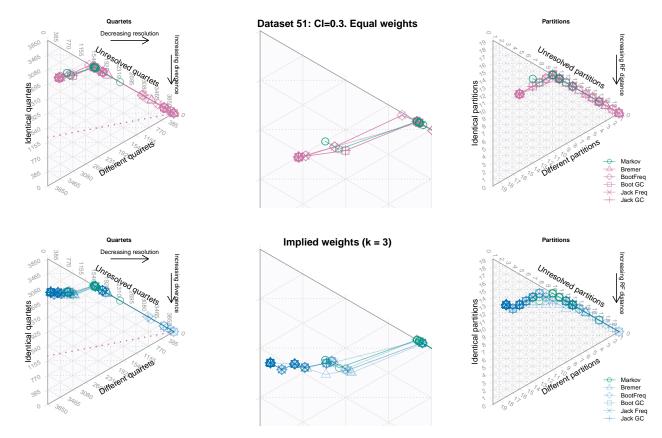


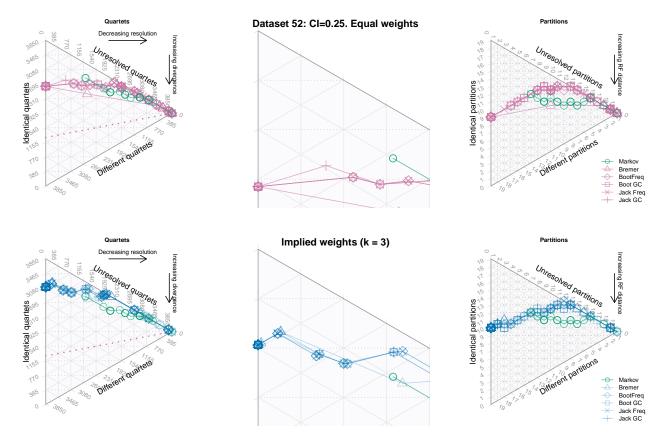
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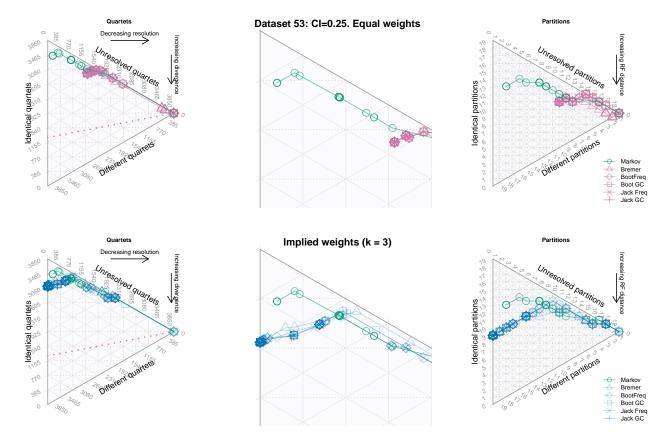


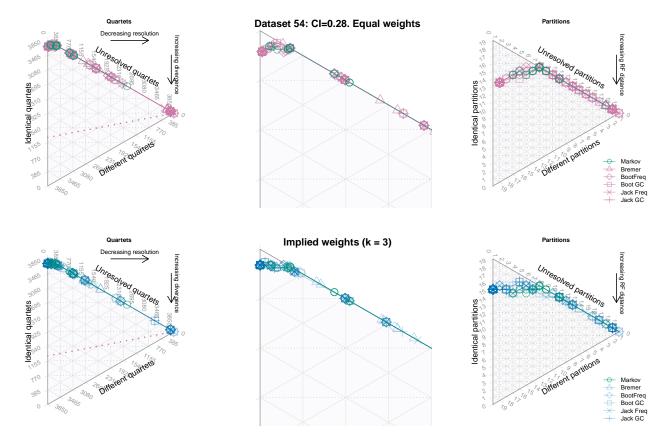
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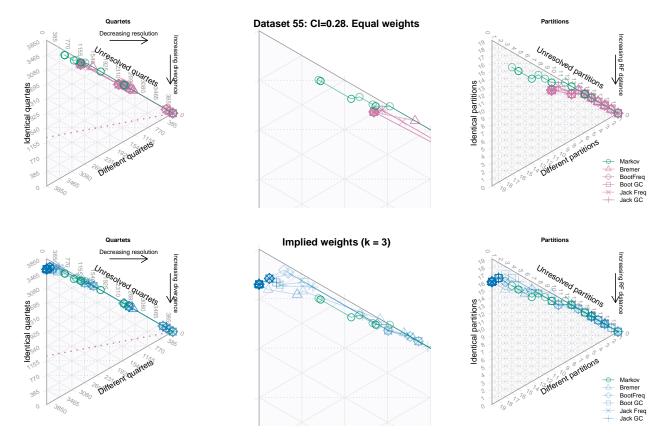




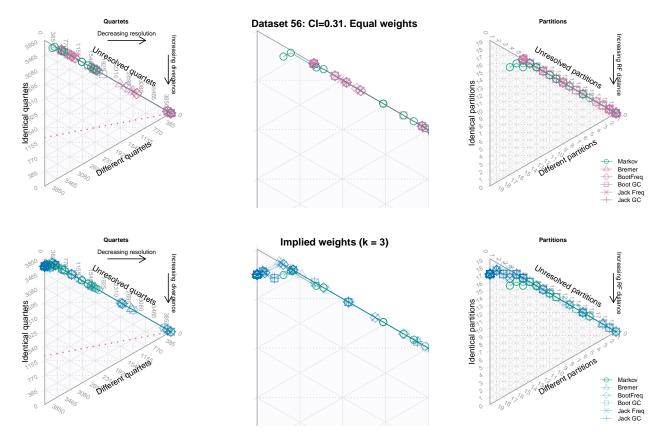
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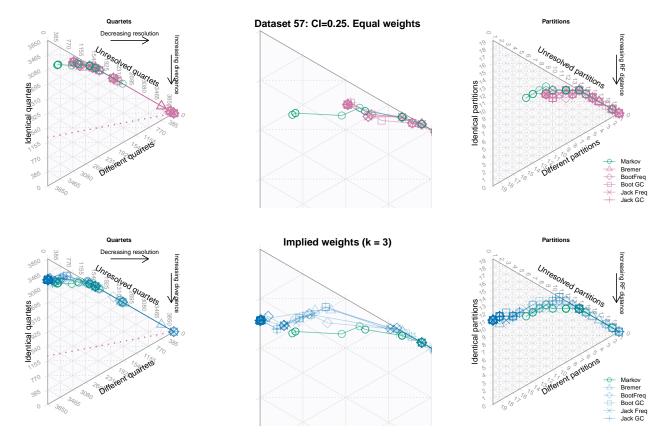


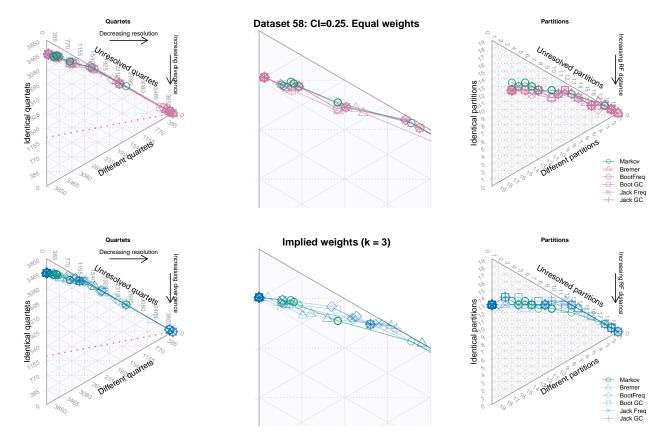


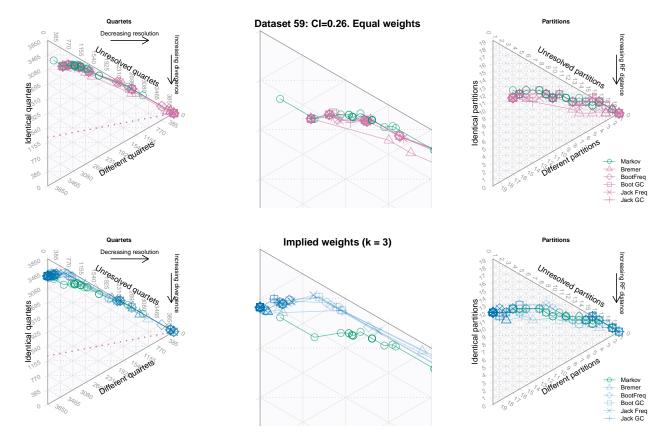


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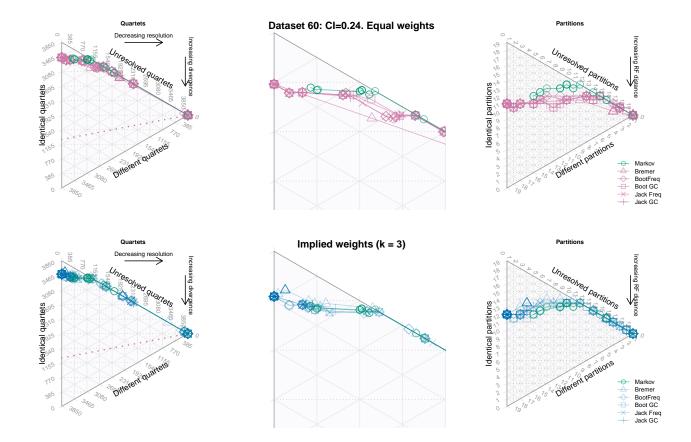






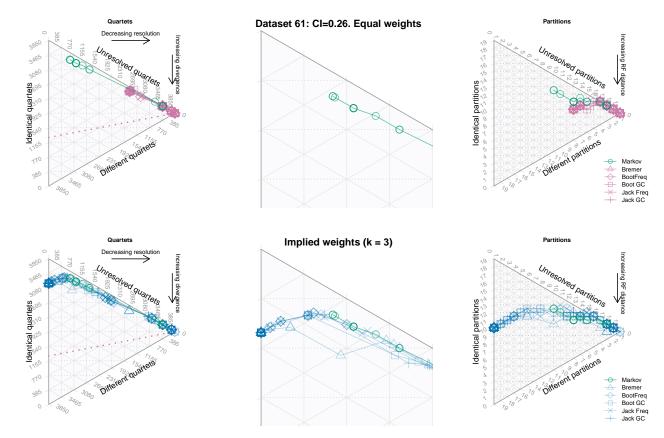


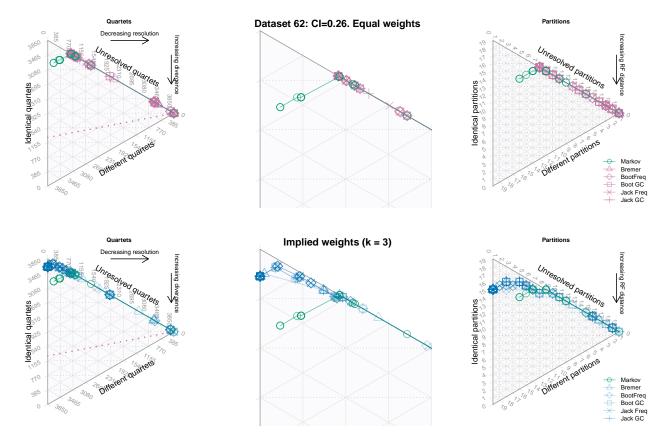
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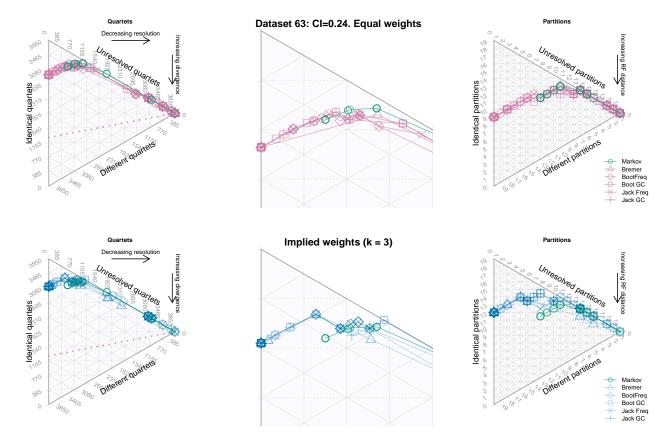


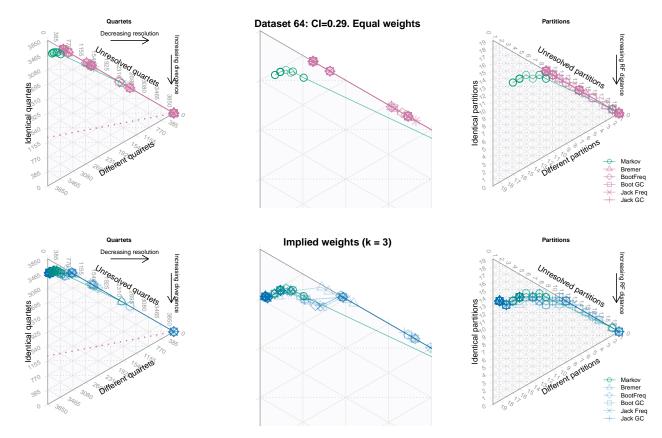
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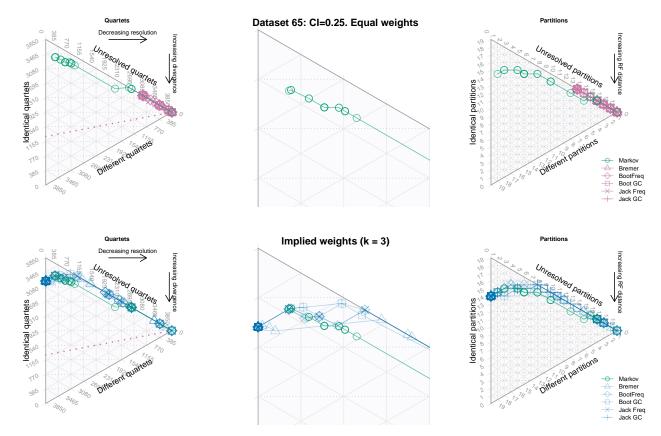
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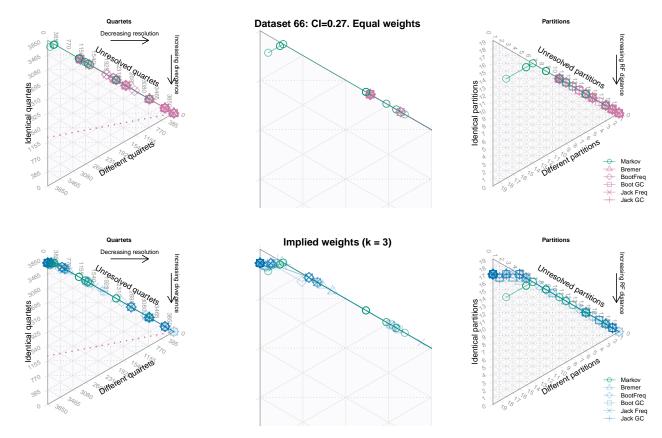


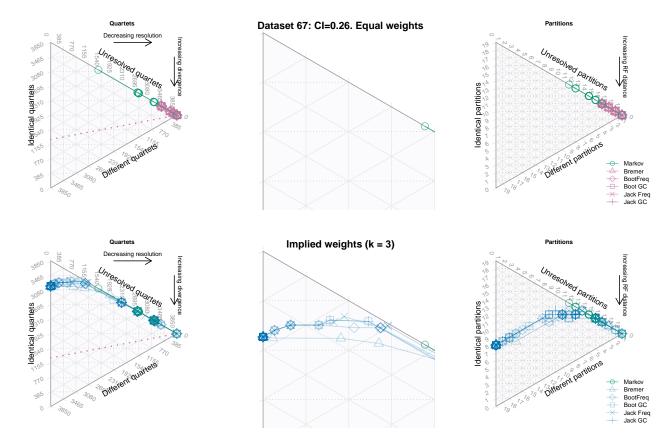




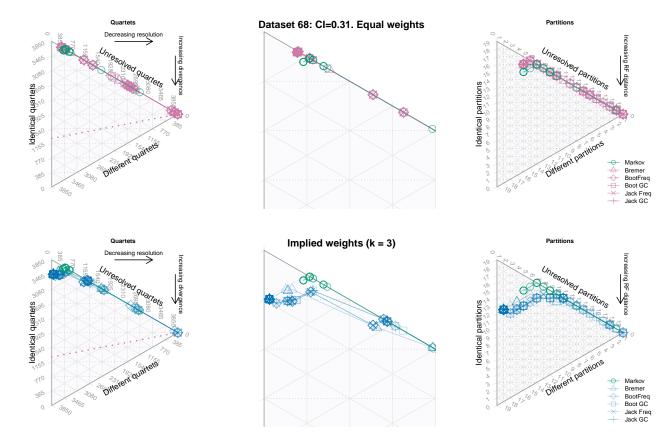


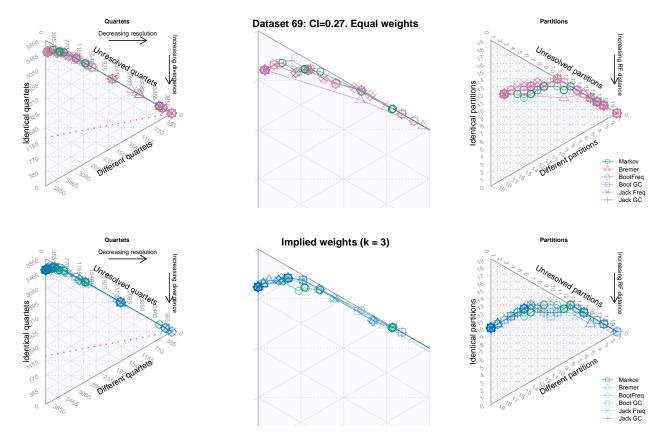
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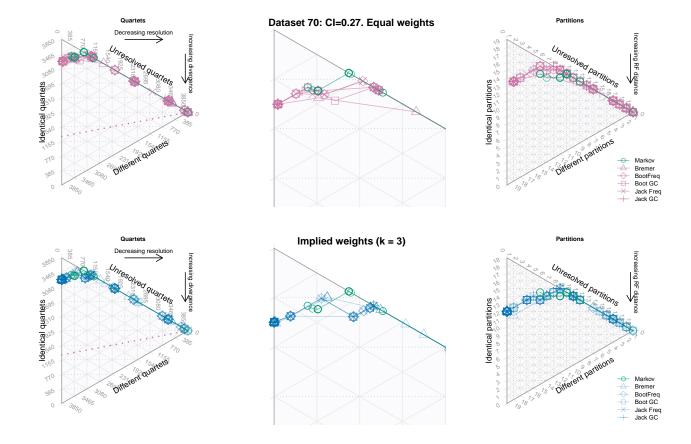


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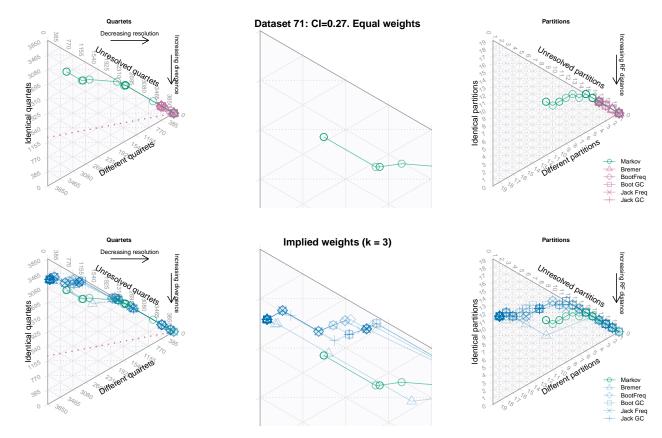


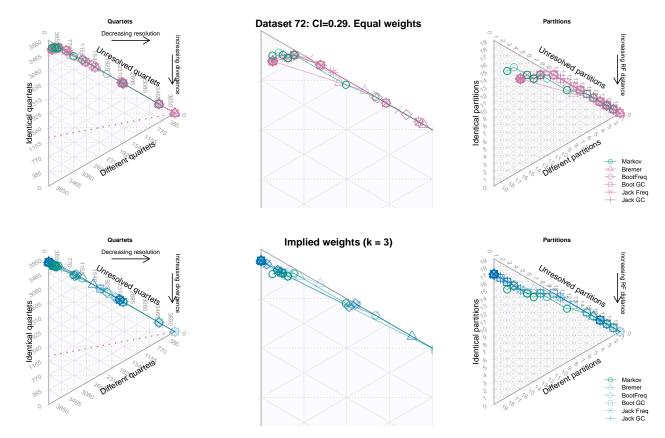


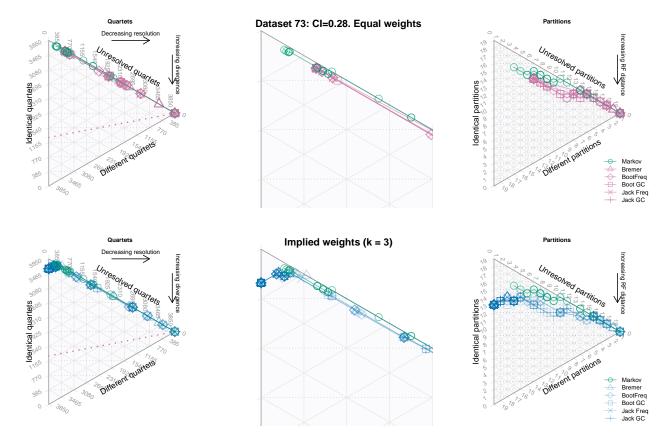
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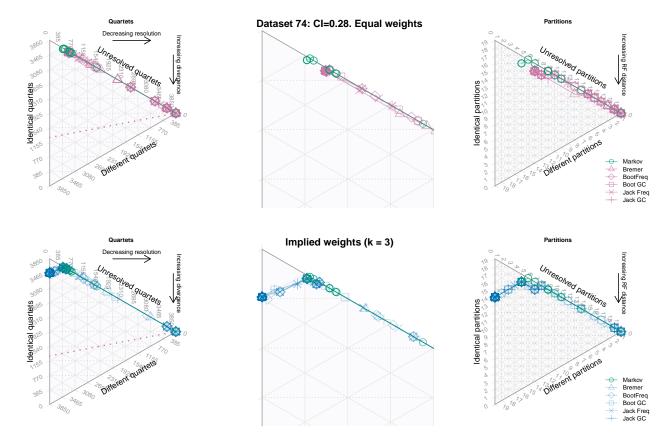


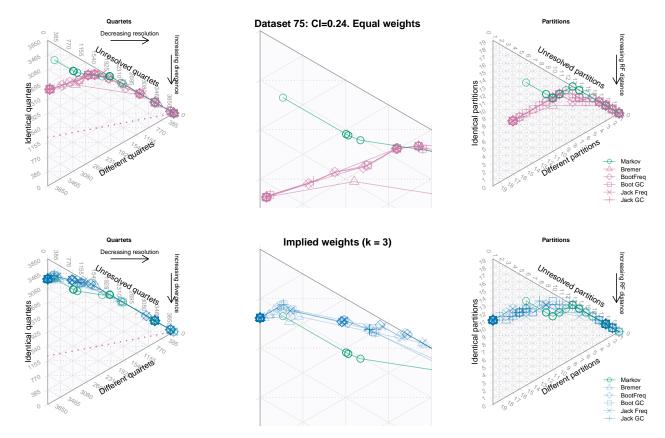
## 0.9 Trees 71–80

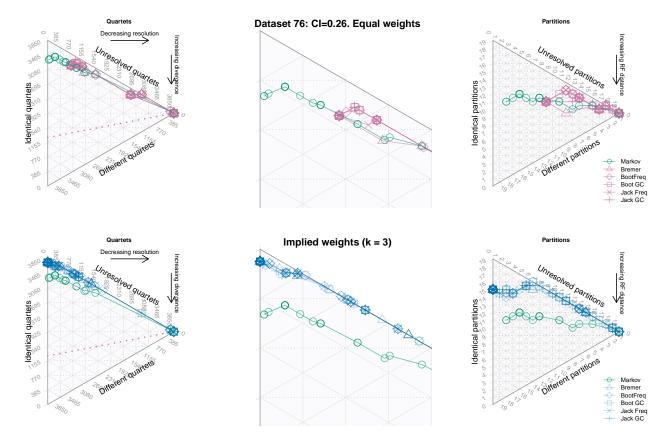


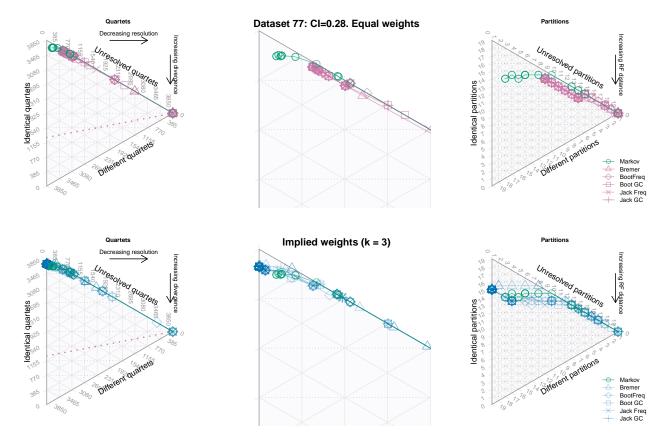


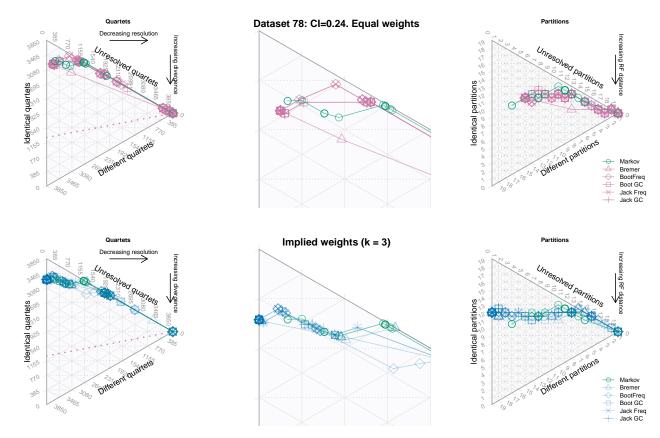


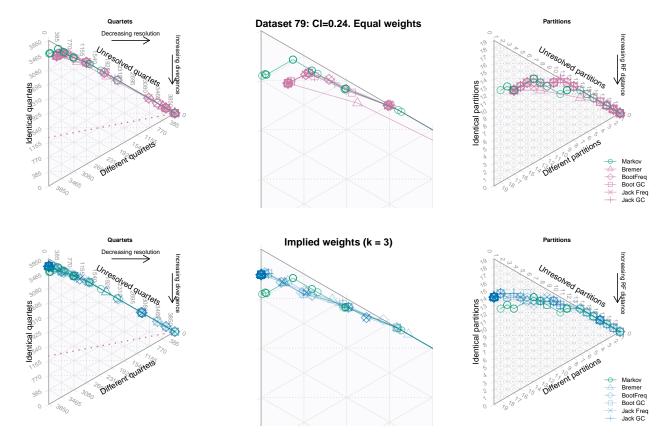


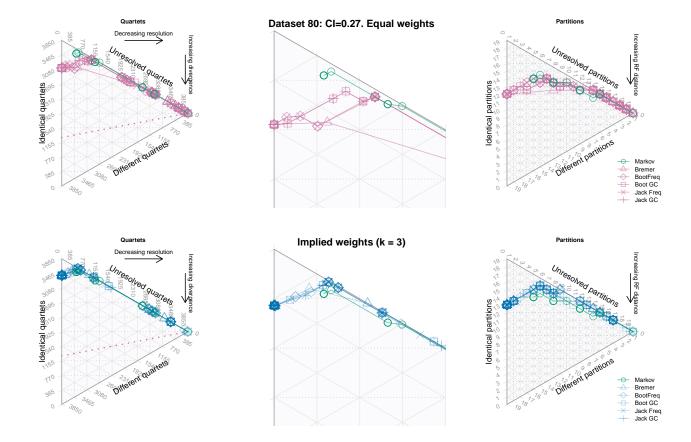






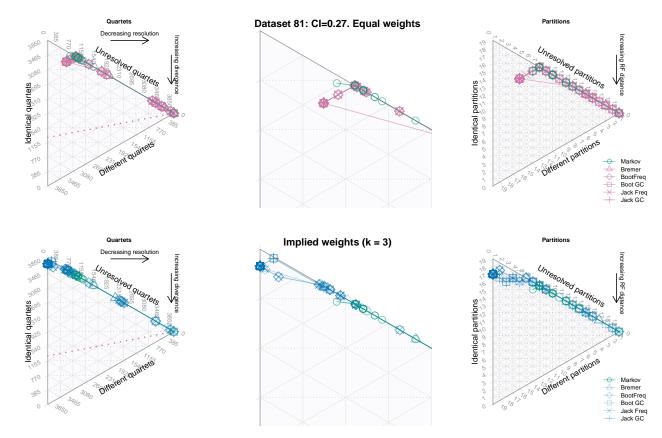


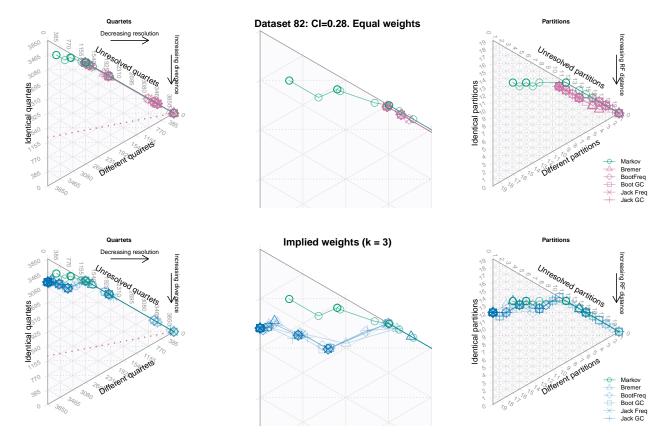


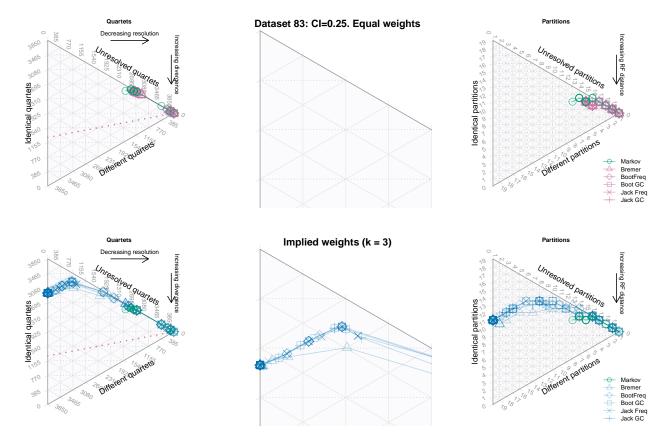


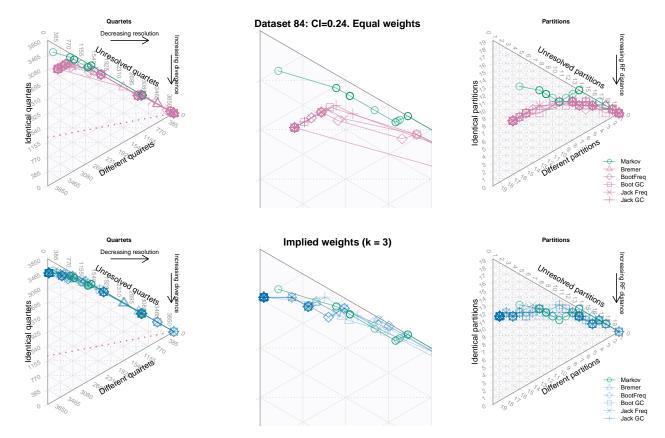
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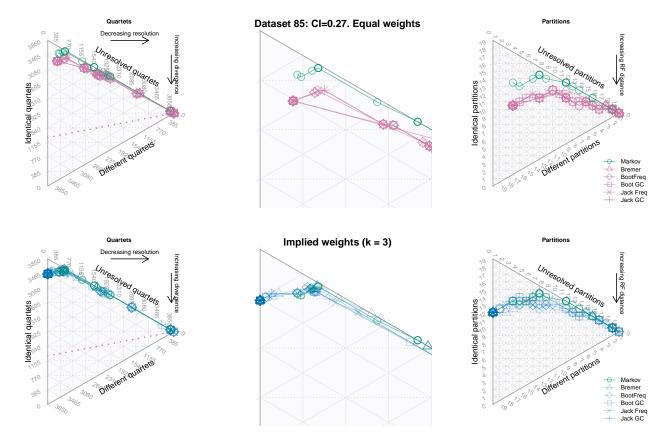
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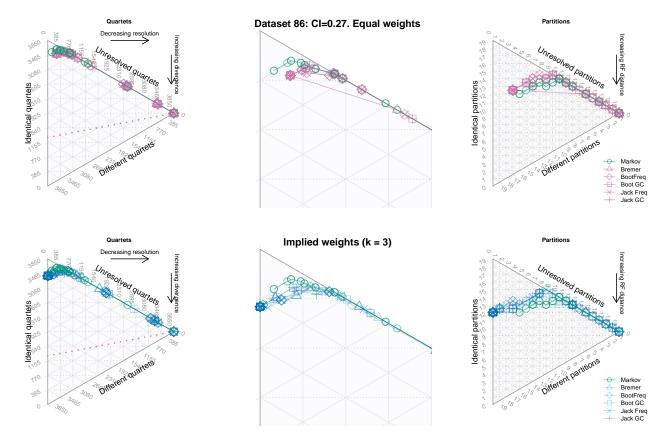


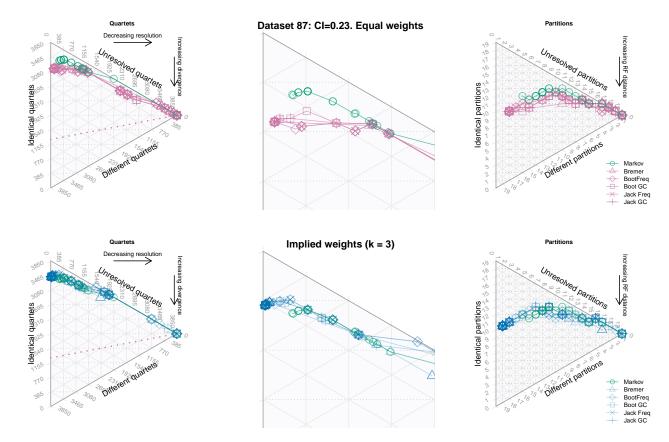


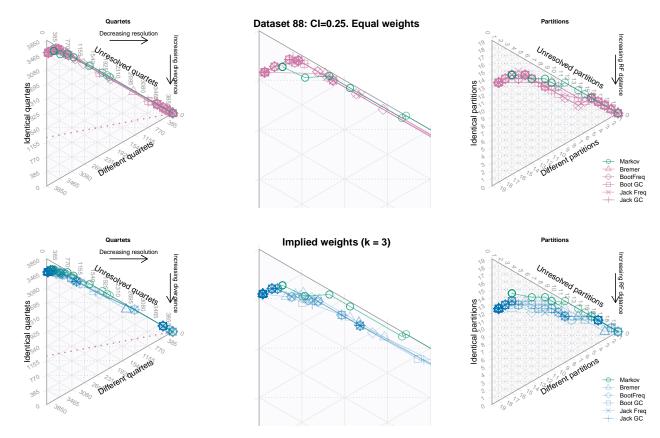


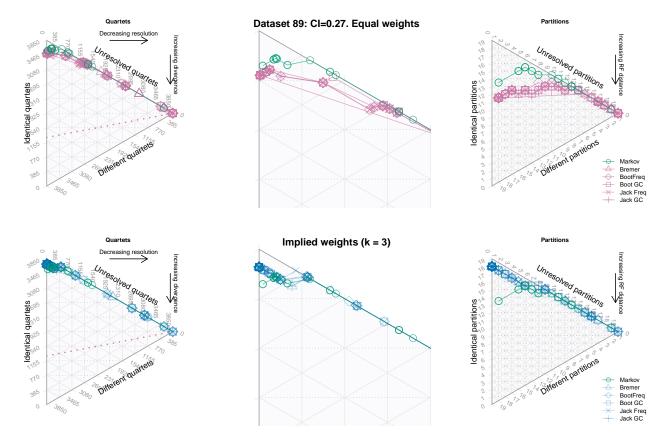


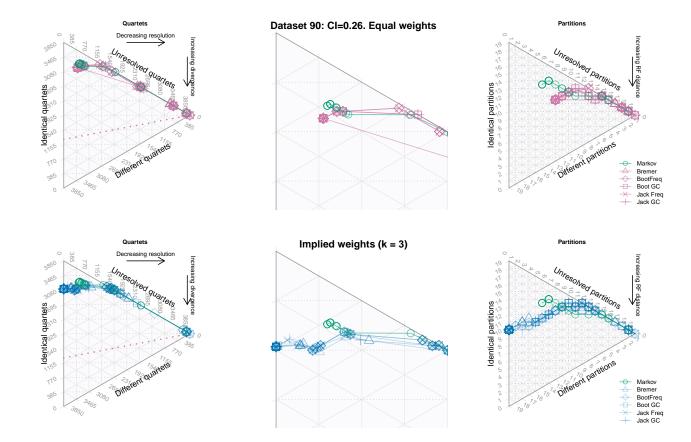






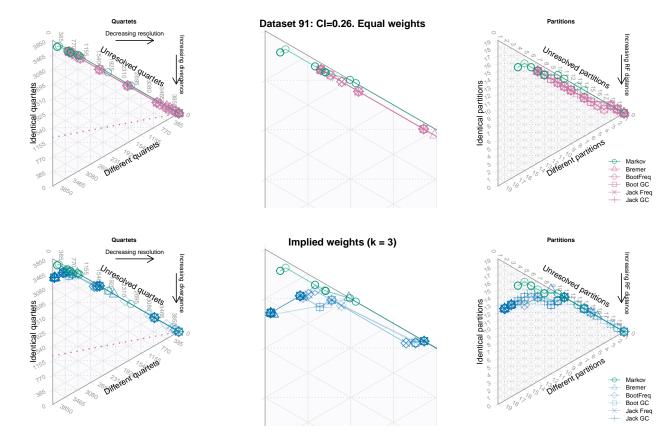


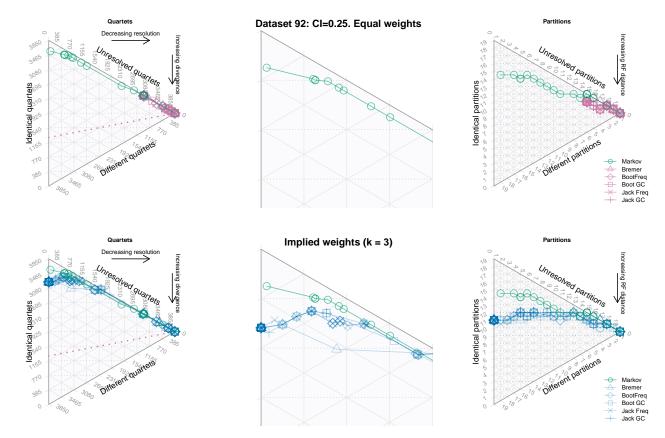


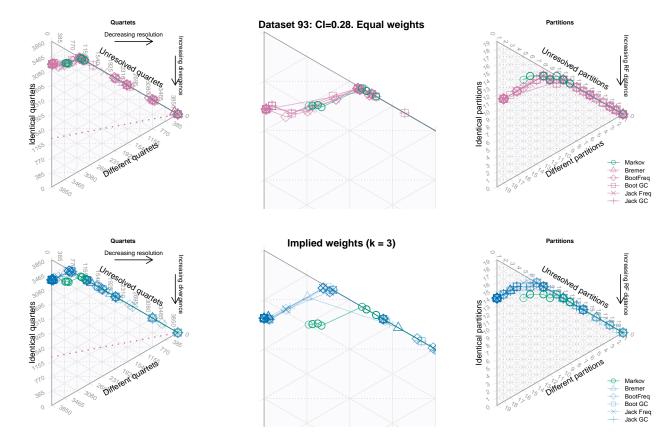


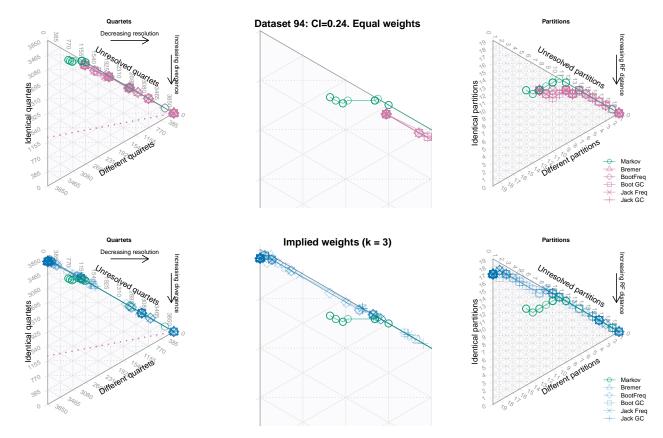
## 0.11 Trees 91–100

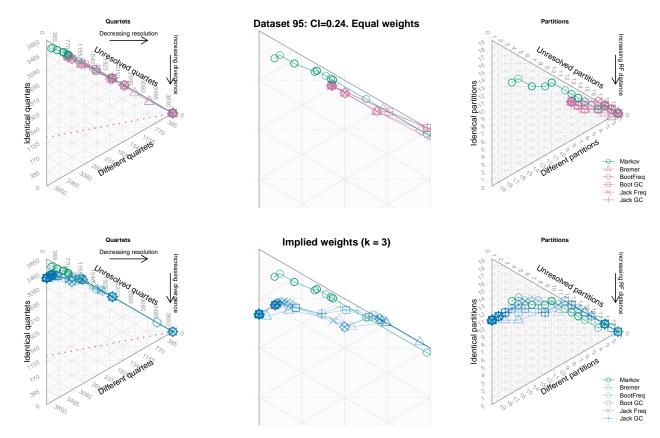
- ## Warning in Sys.setlocale("LC\_ALL", "English\_United Kingdom.1252"): OS
  ## reports request to set locale to "English\_United Kingdom.1252" cannot be
- ## honored



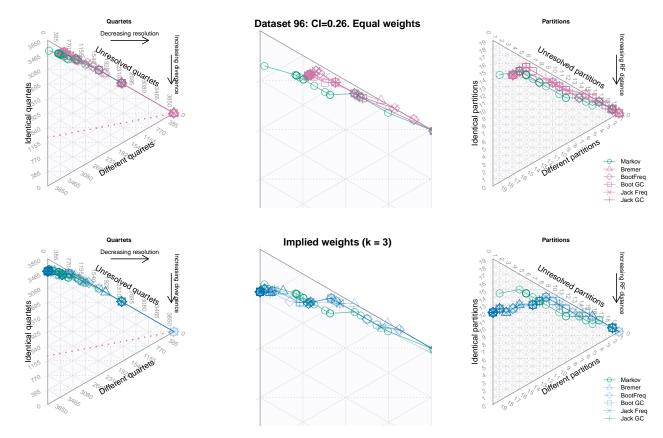


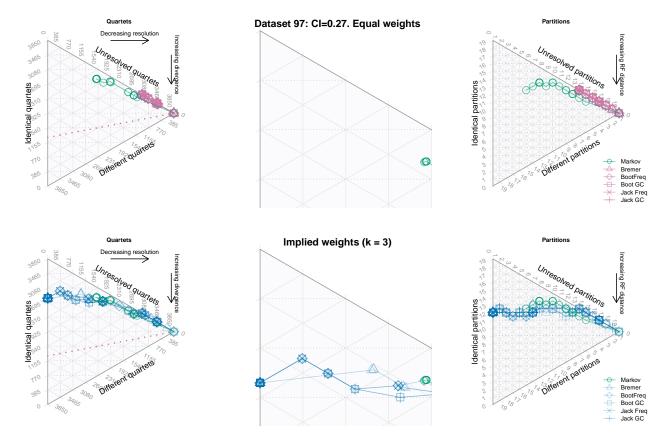


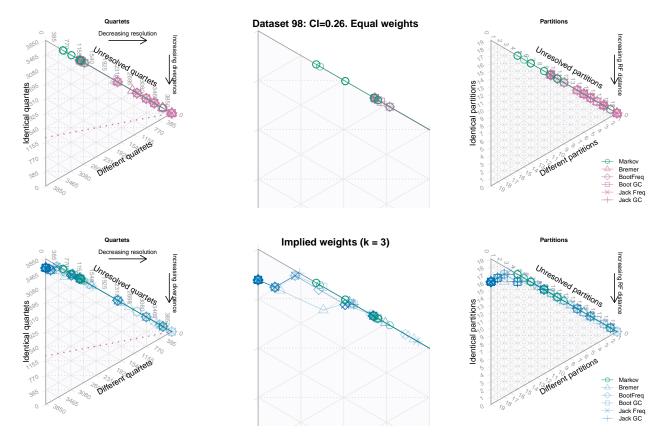




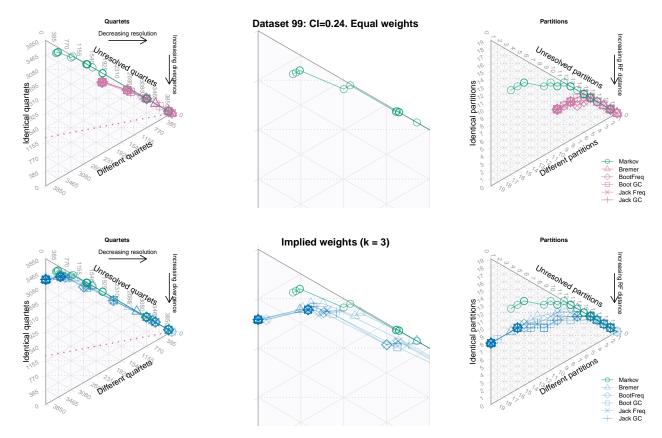
## Warning in Sys.setlocale("LC\_ALL", "English\_United Kingdom.1252"): OS
## reports request to set locale to "English\_United Kingdom.1252" cannot be
## honored

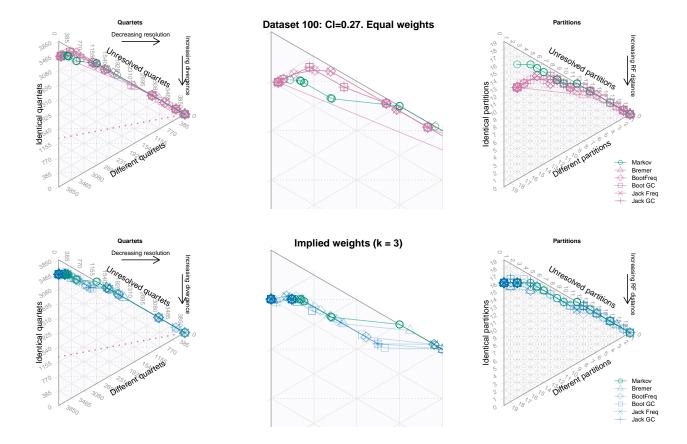






## Warning in Sys.setlocale("LC\_ALL", "English\_United Kingdom.1252"): OS
## reports request to set locale to "English\_United Kingdom.1252" cannot be
## honored





## References

- 1. Congreve CR, Lamsdell JC. 2016 Implied weighting and its utility in palaeontological datasets: a study using modelled phylogenetic matrices. *Palaeontology* **59**, 447–465. (doi:10.1111/pala.12236)
- 2. Smith MR. In press. Bayesian and parsimony approaches reconstruct informative trees from simulated morphological datasets.  $Biology\ Letters;\ preprint\ at\ BioRxiv\ (doi:10.1101/227942)$