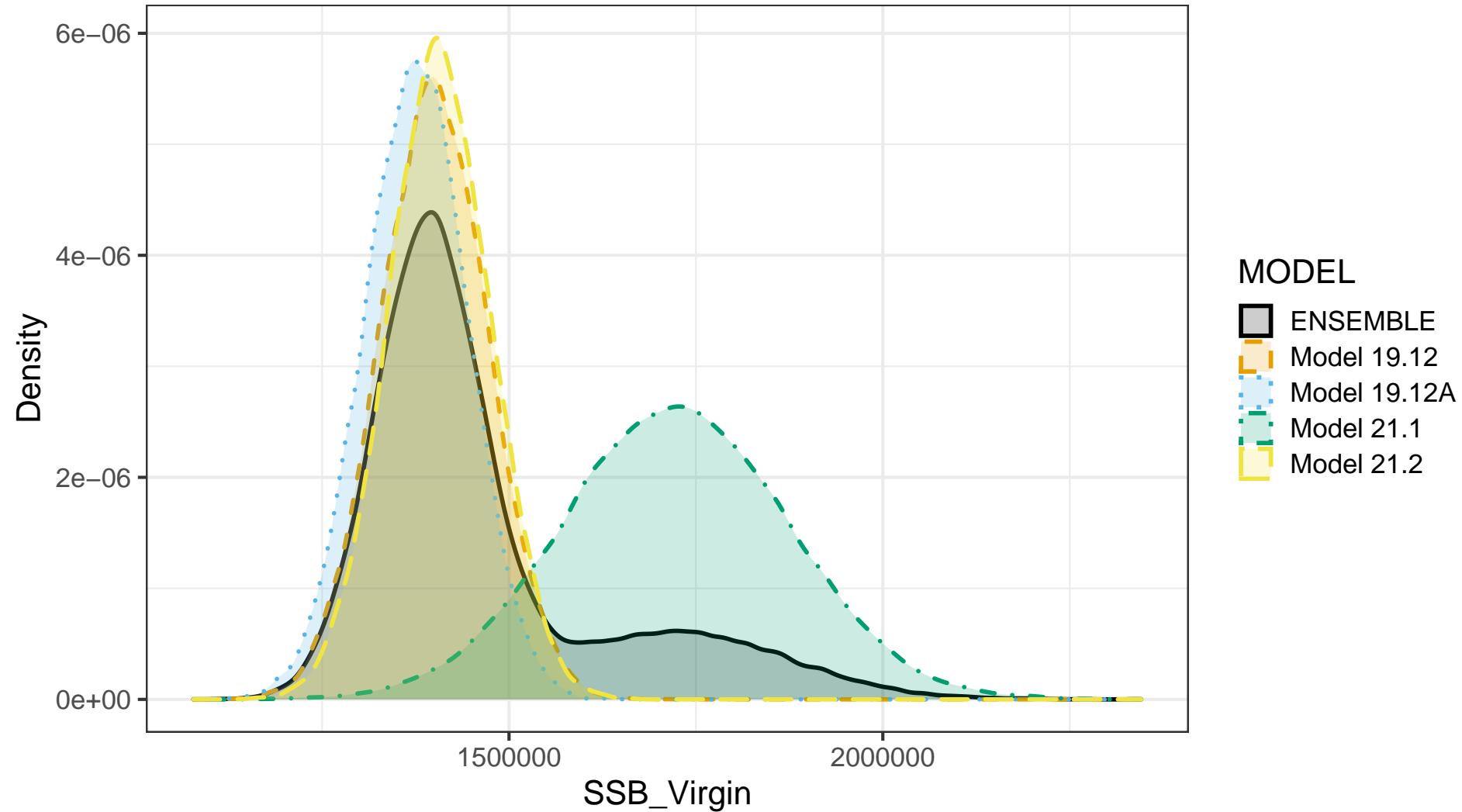
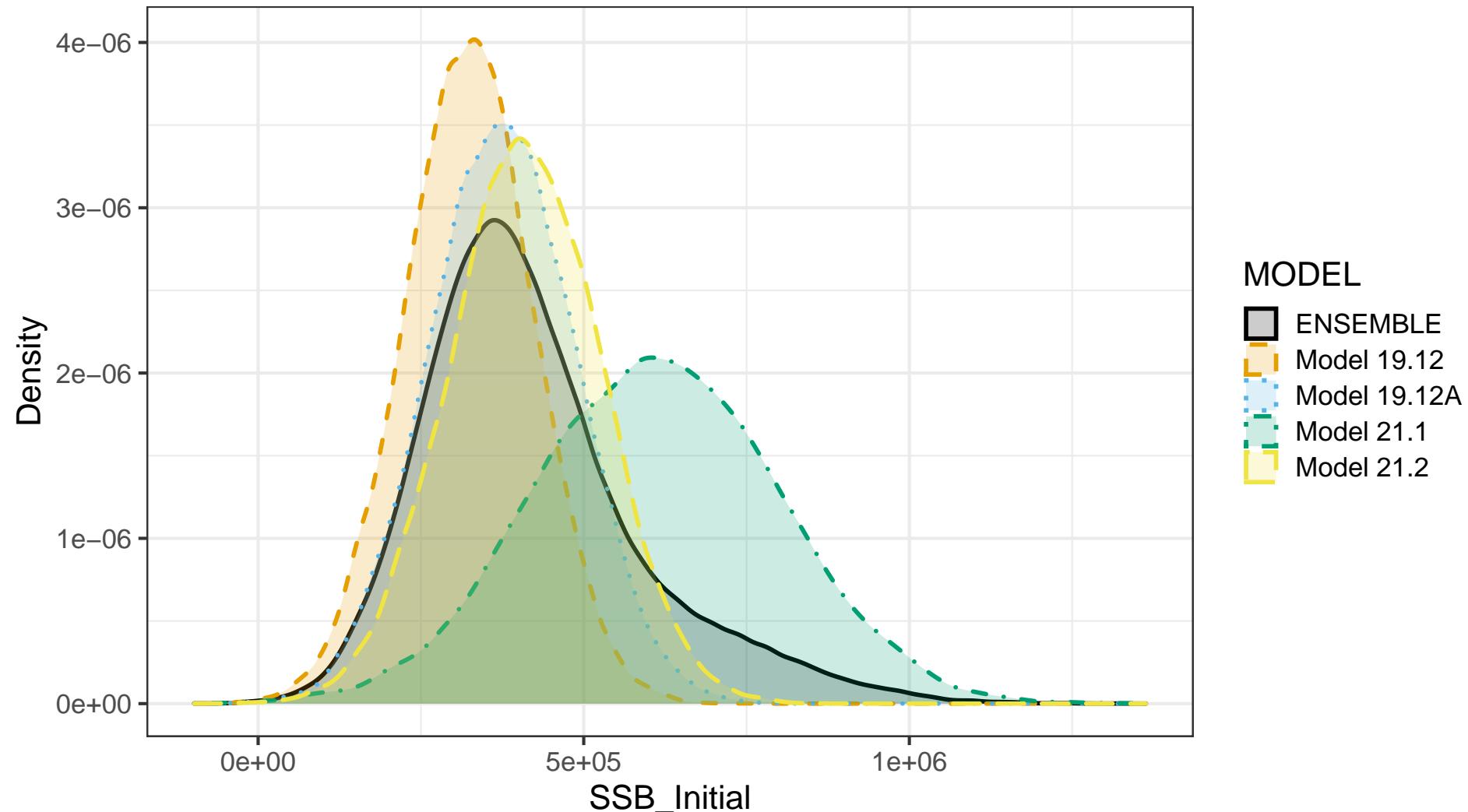


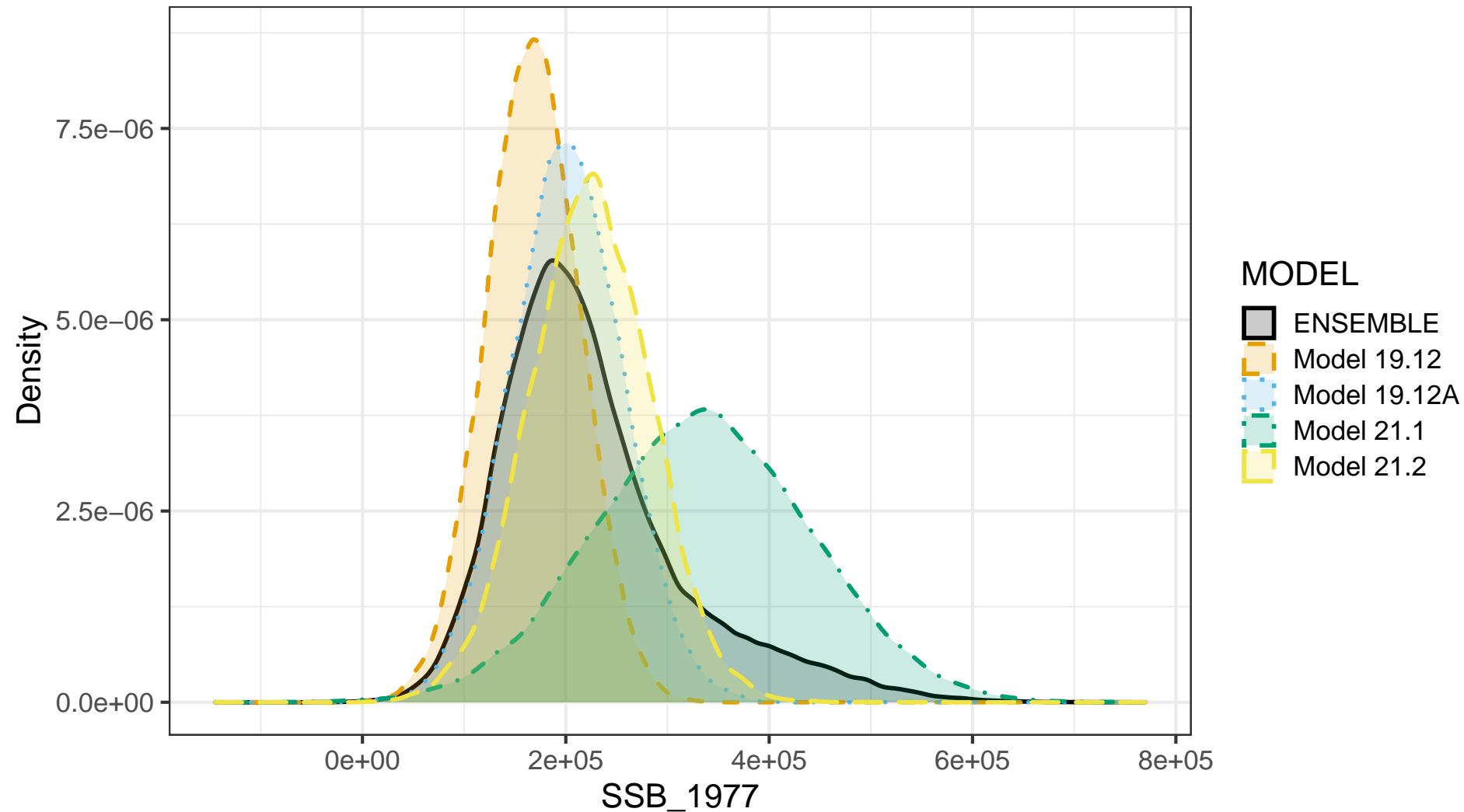
SSB_Virgin



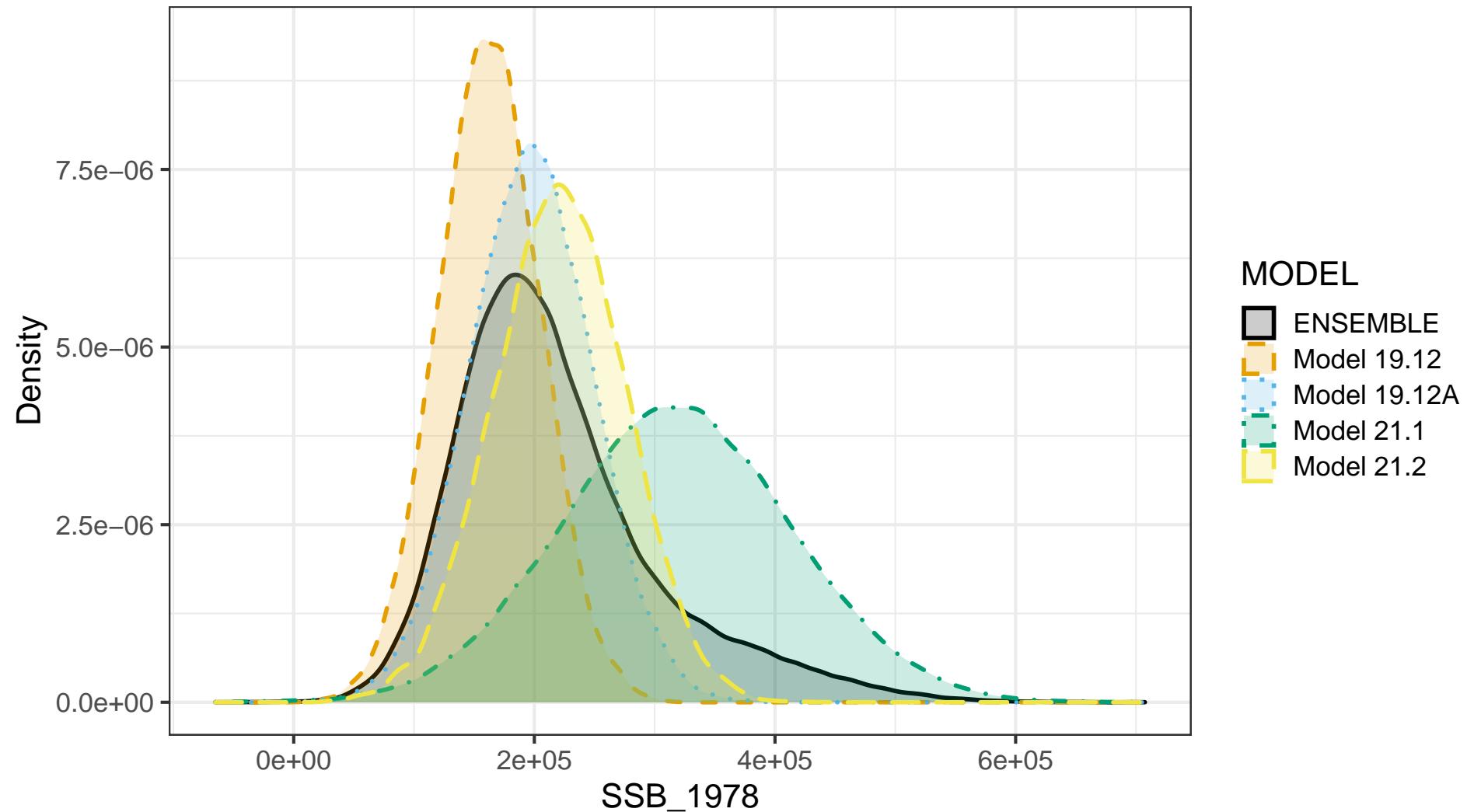
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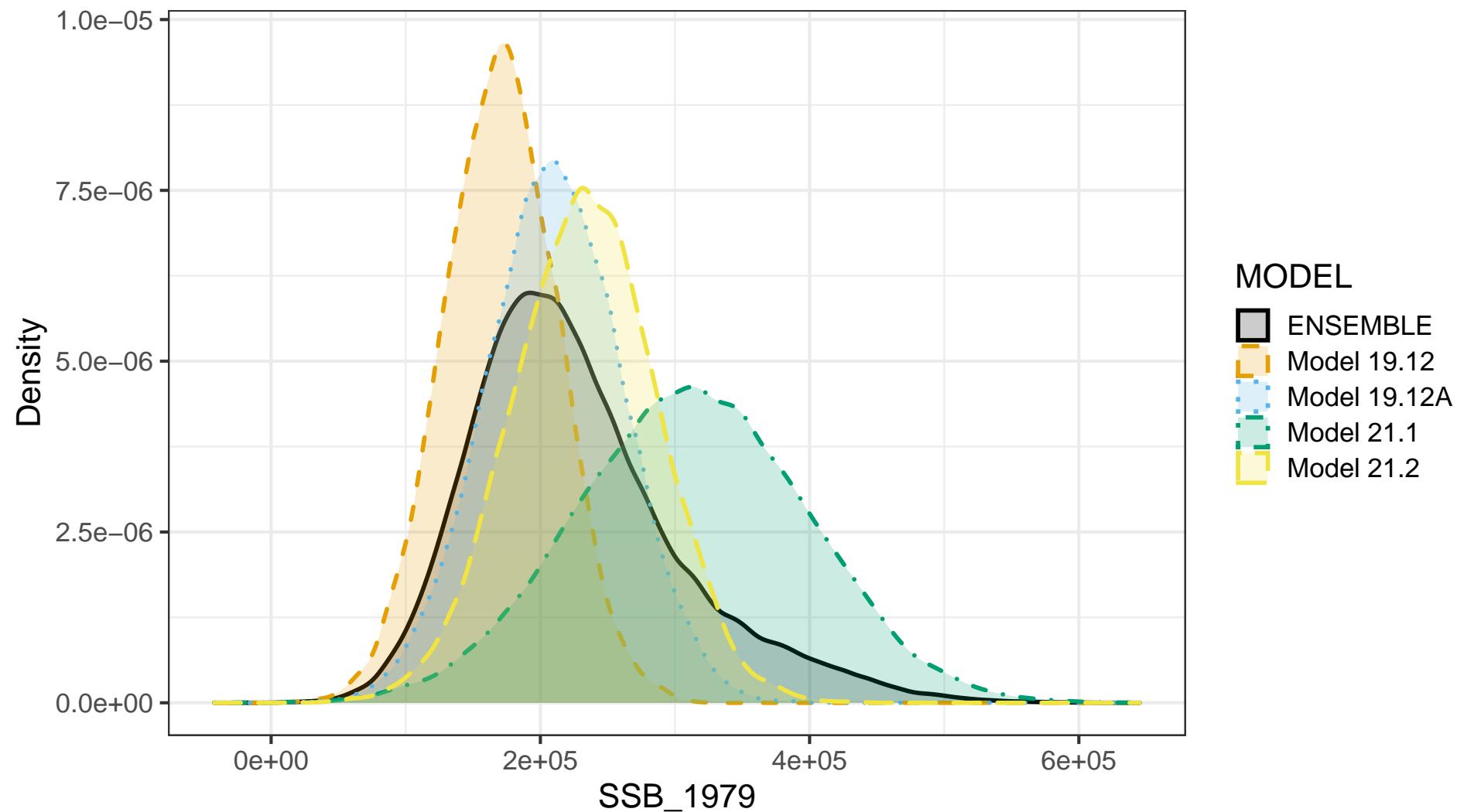
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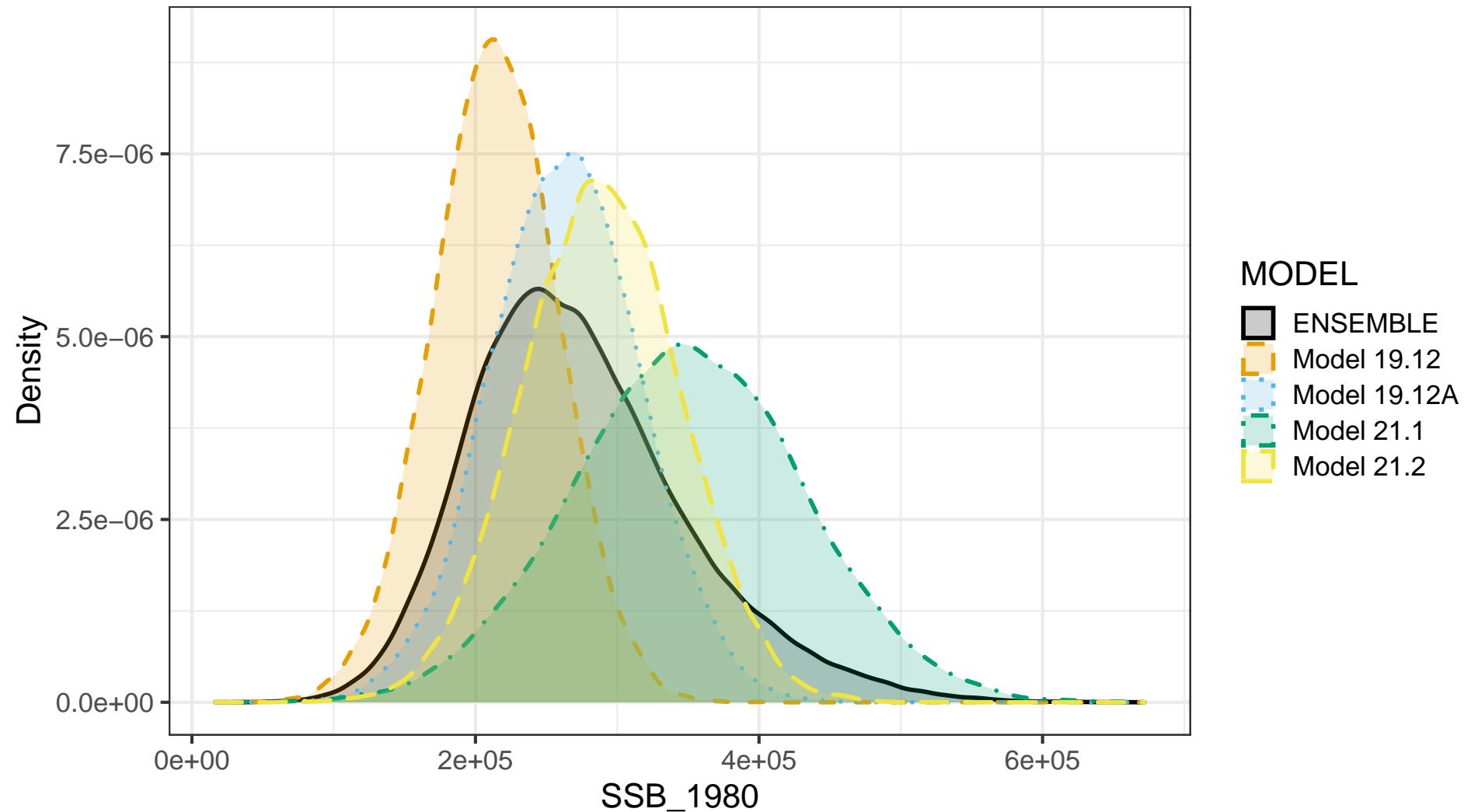
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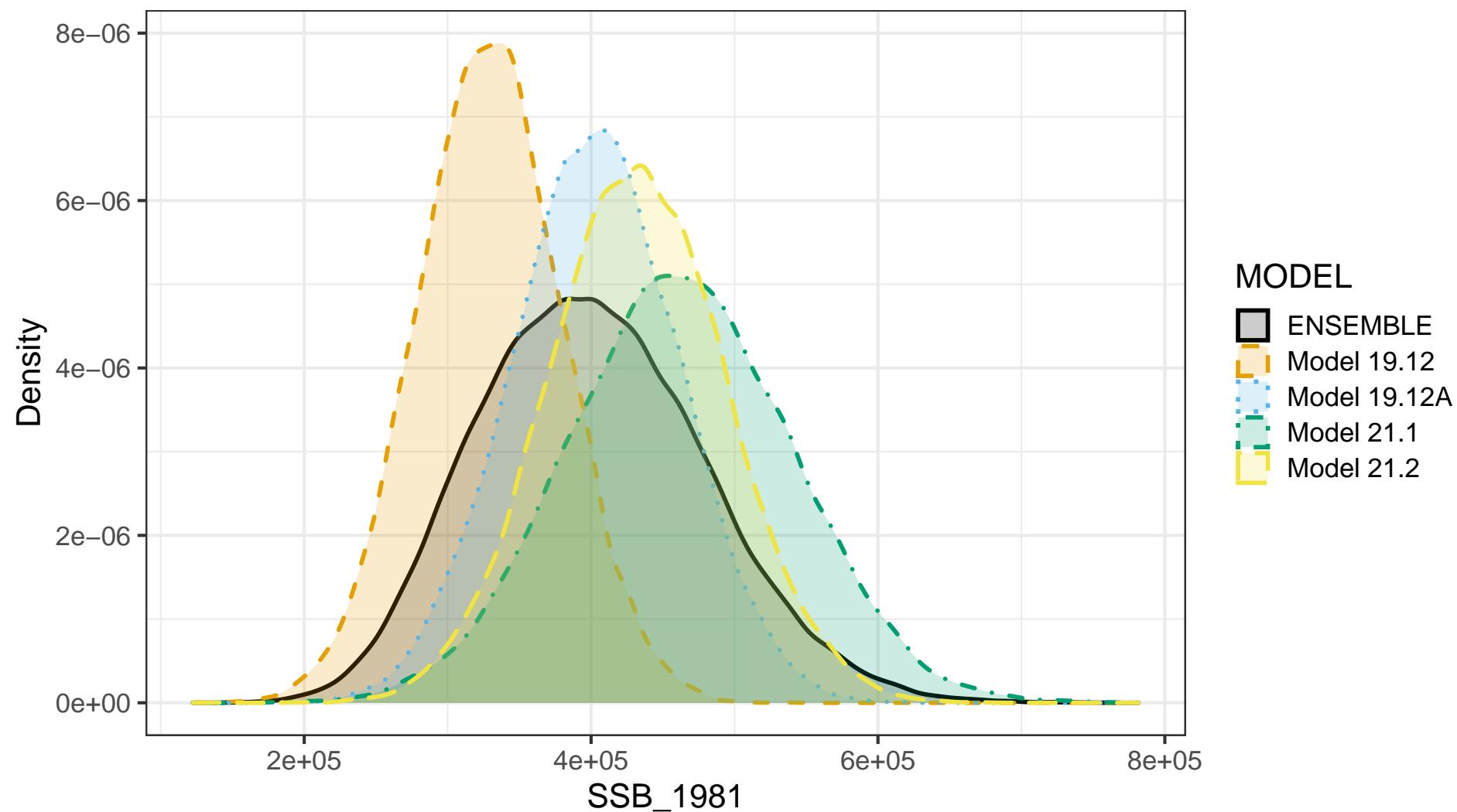
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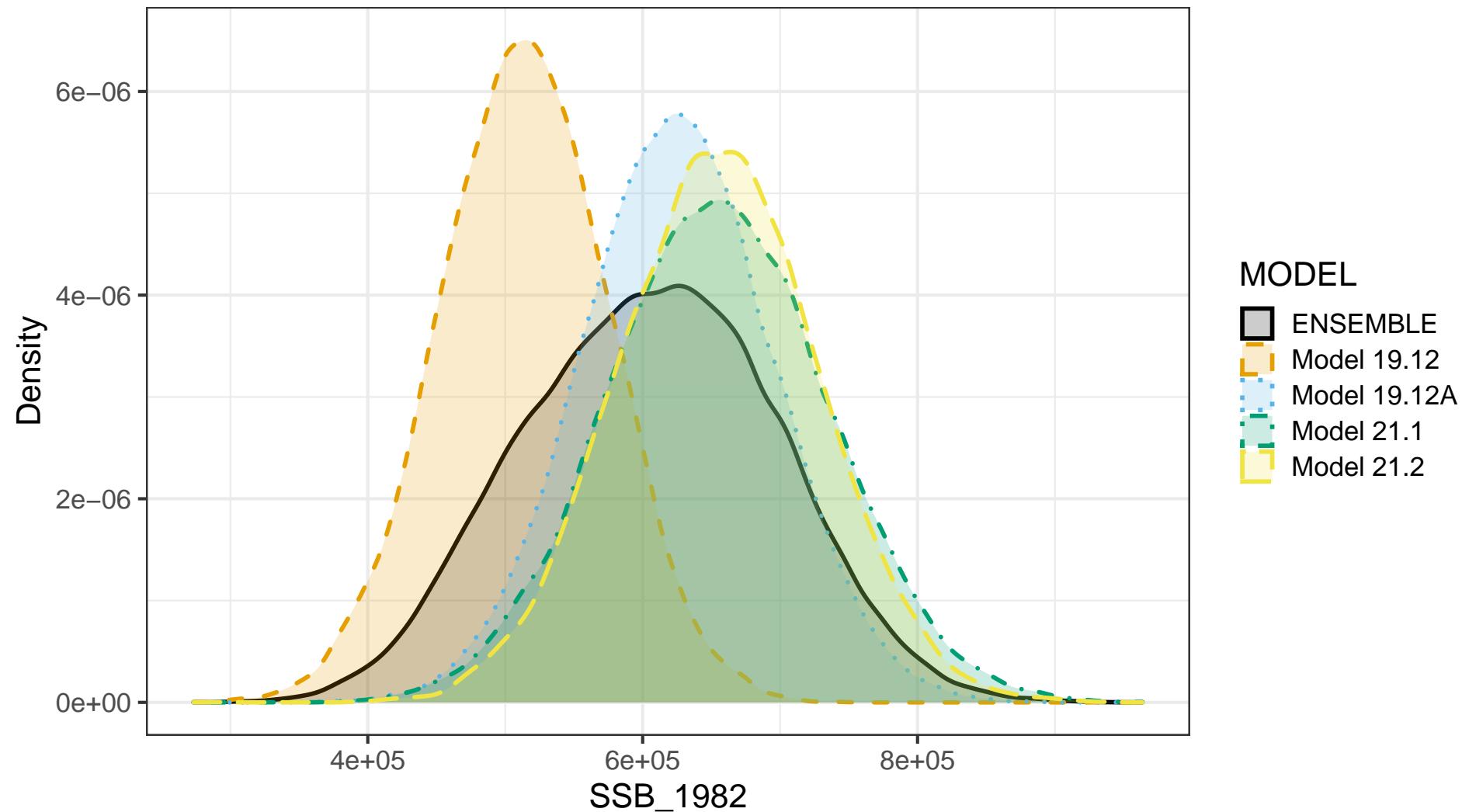
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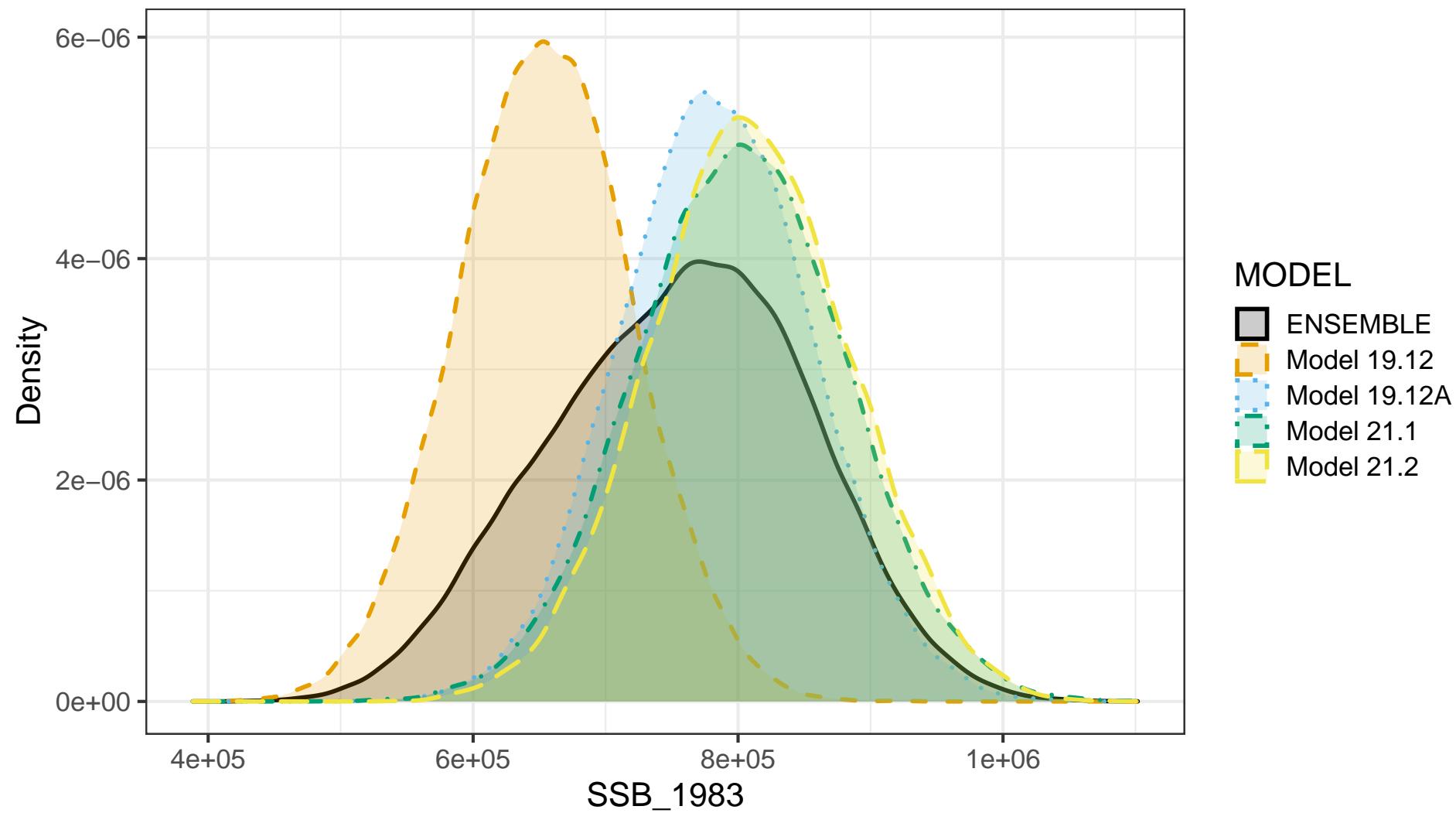
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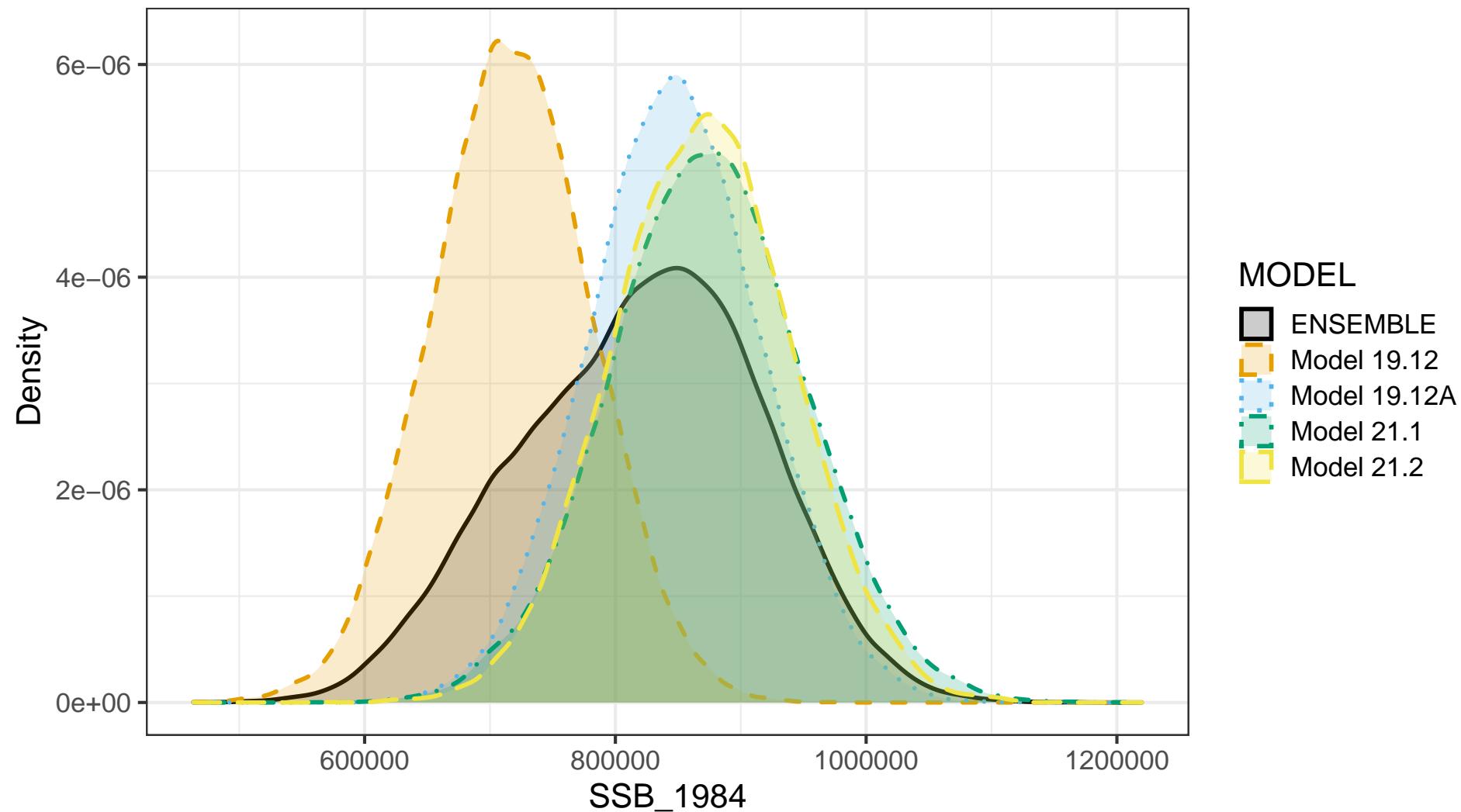
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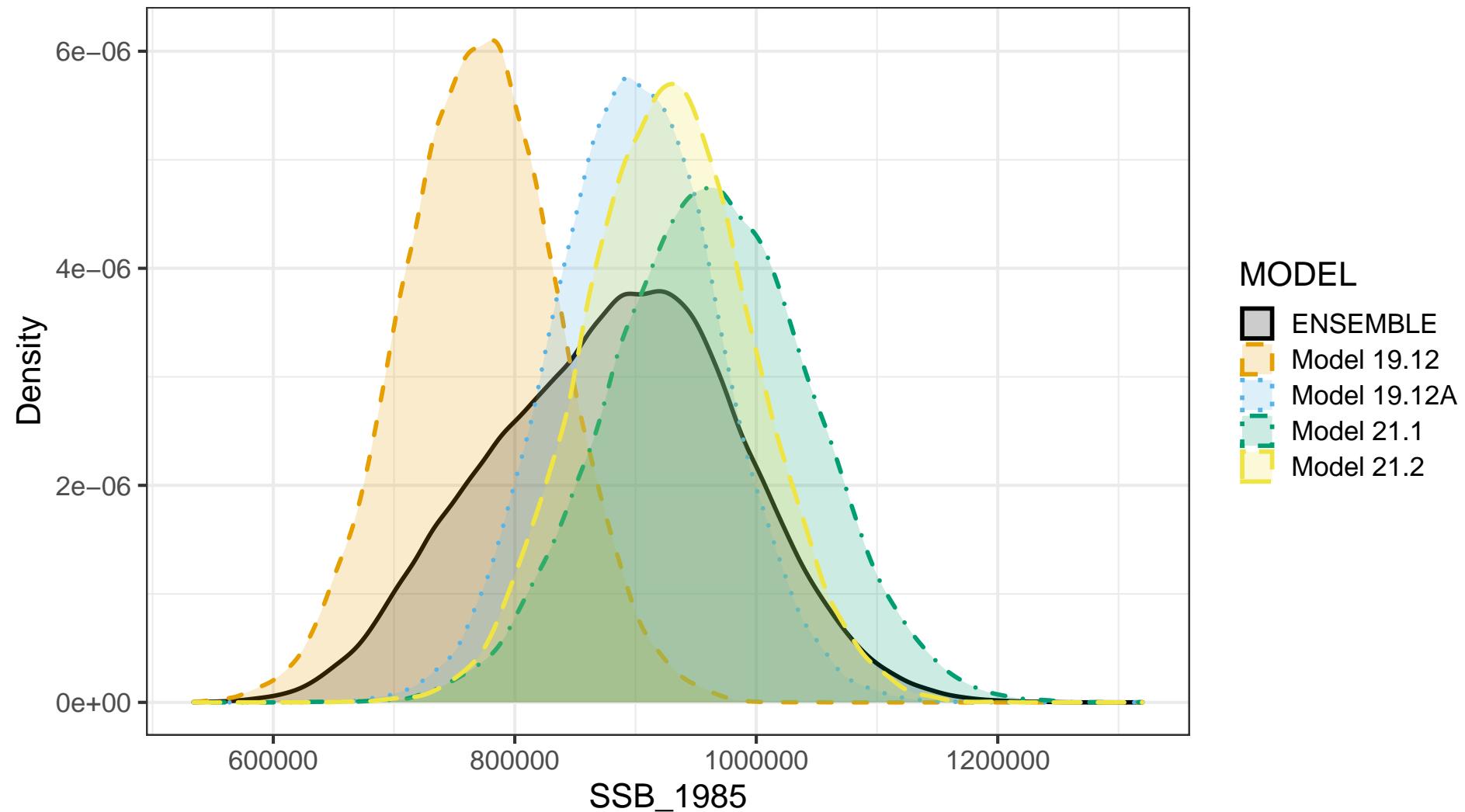
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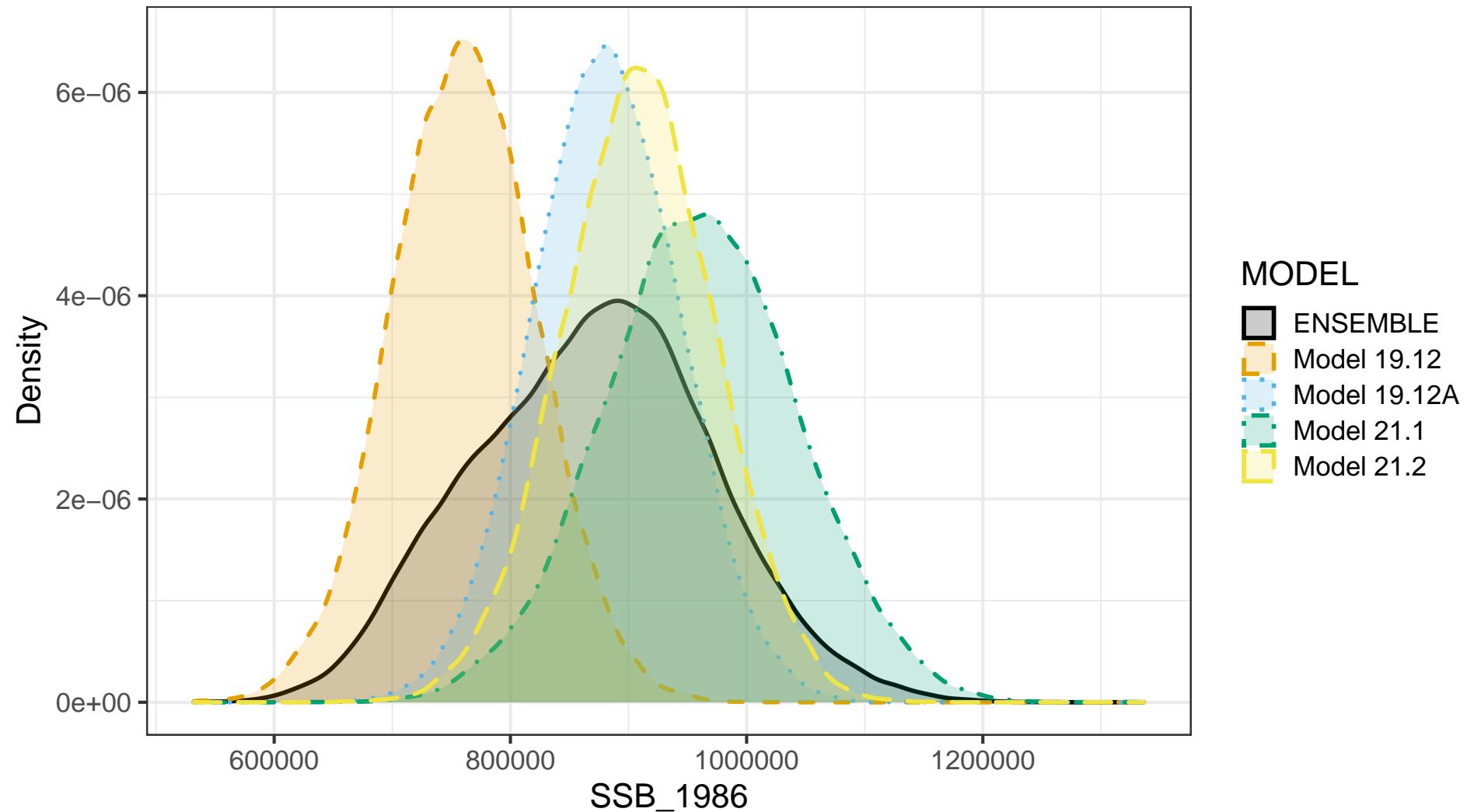
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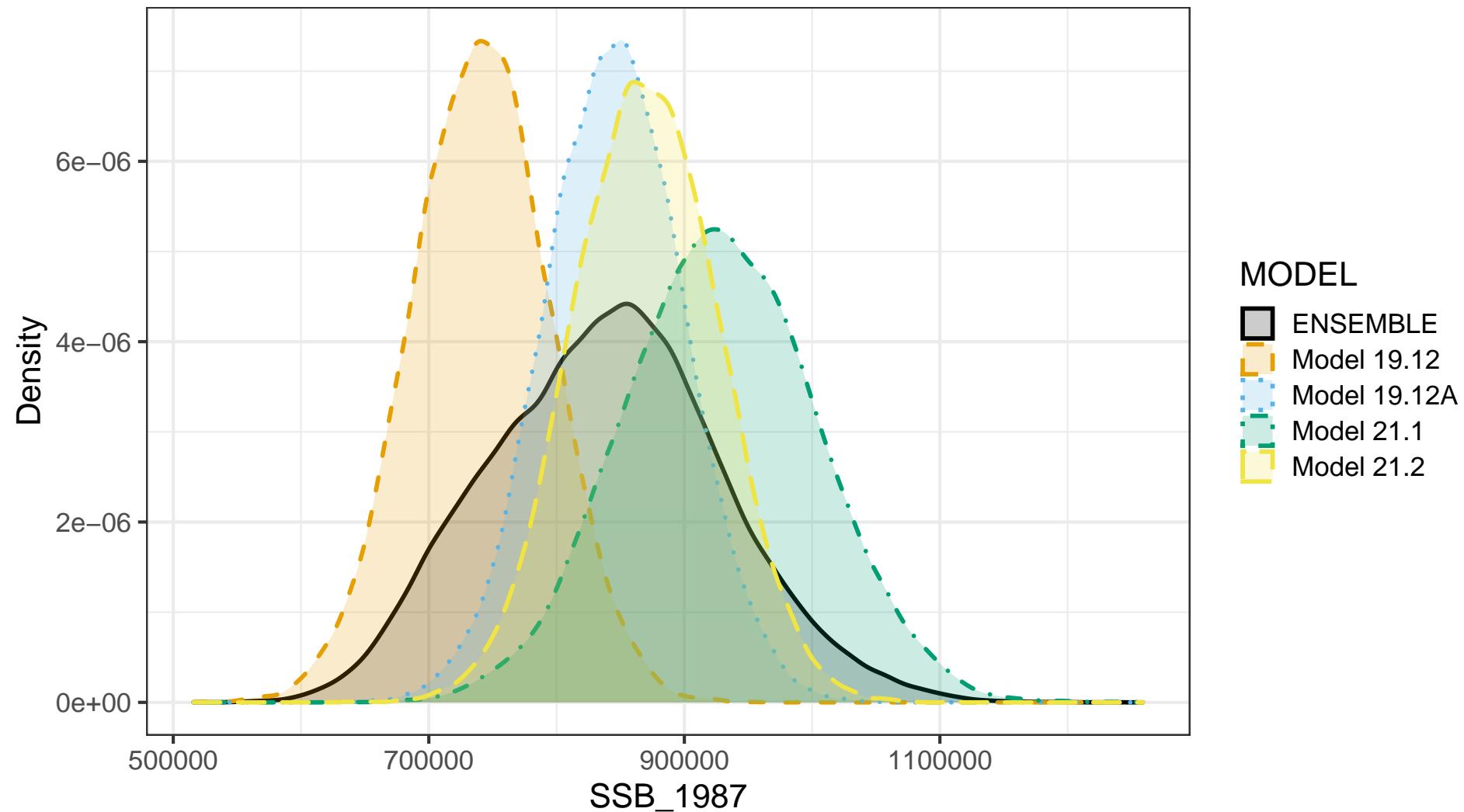
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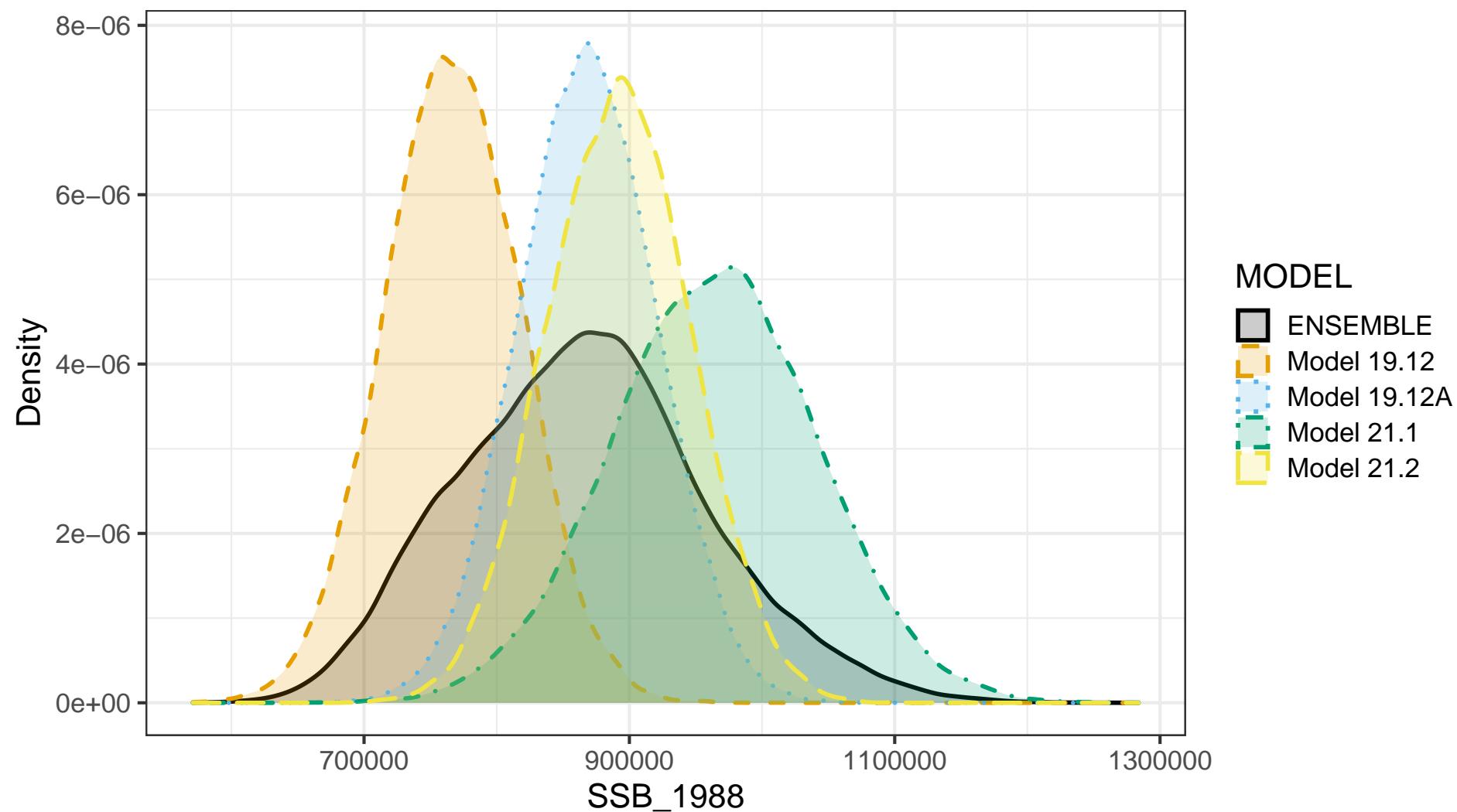
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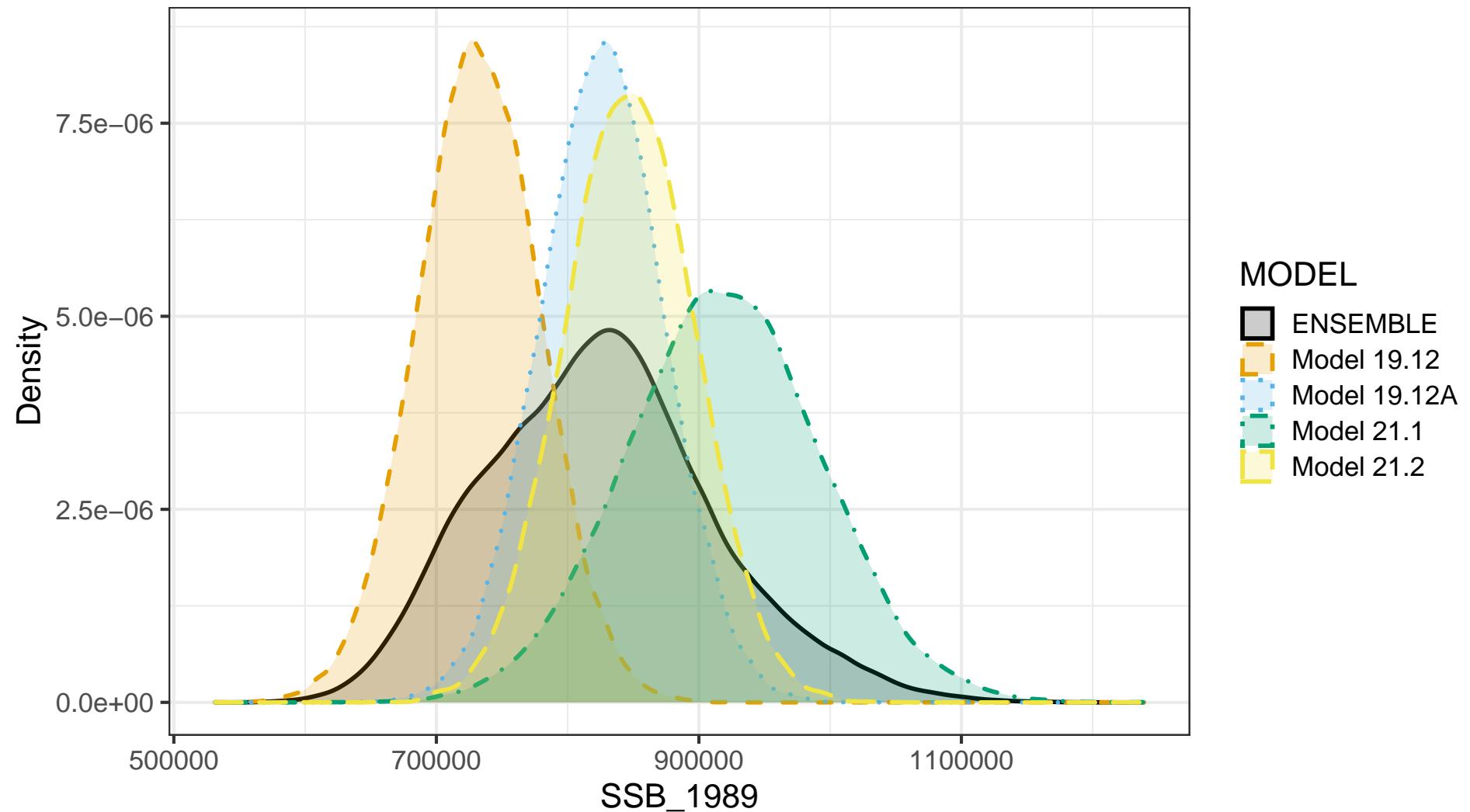
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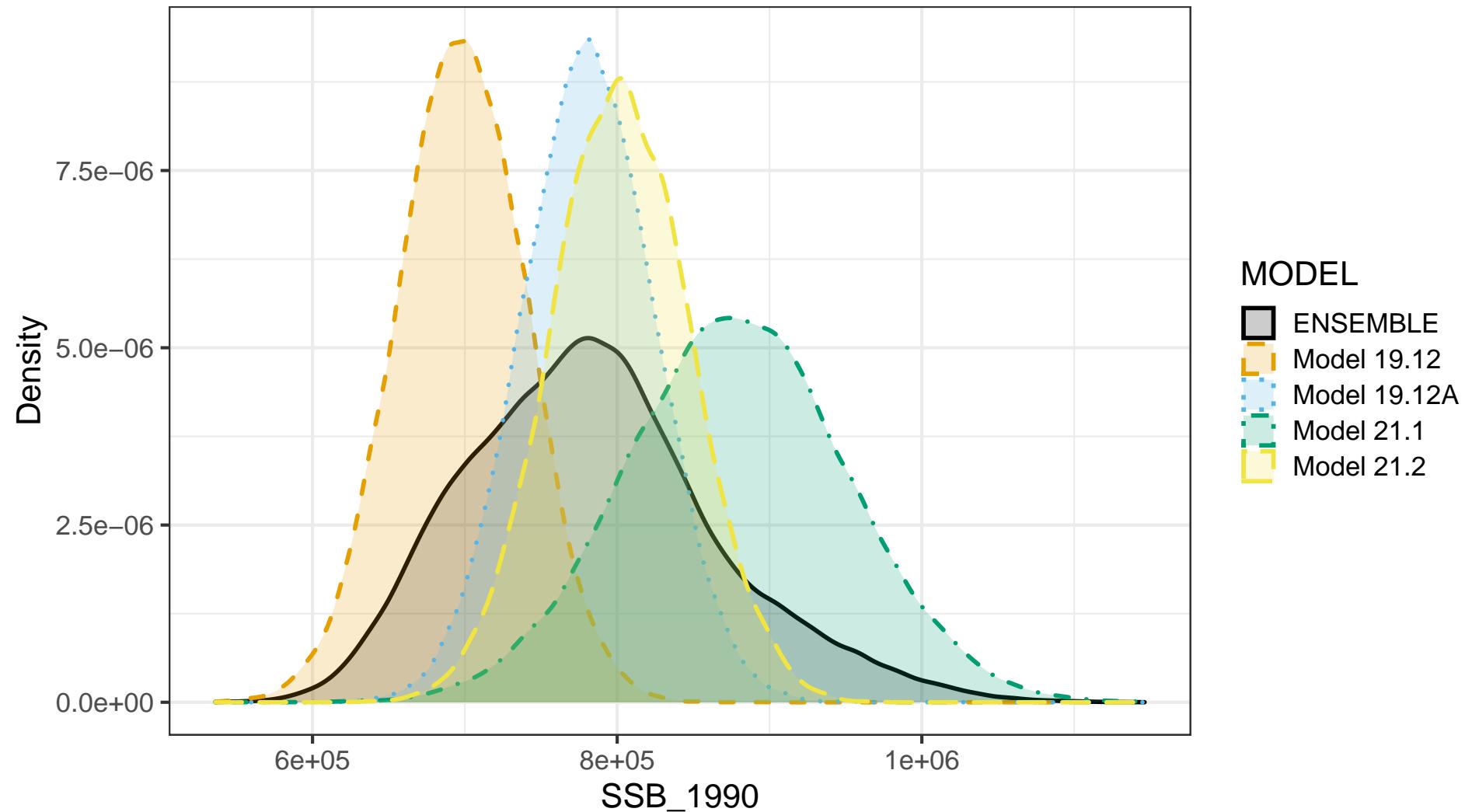
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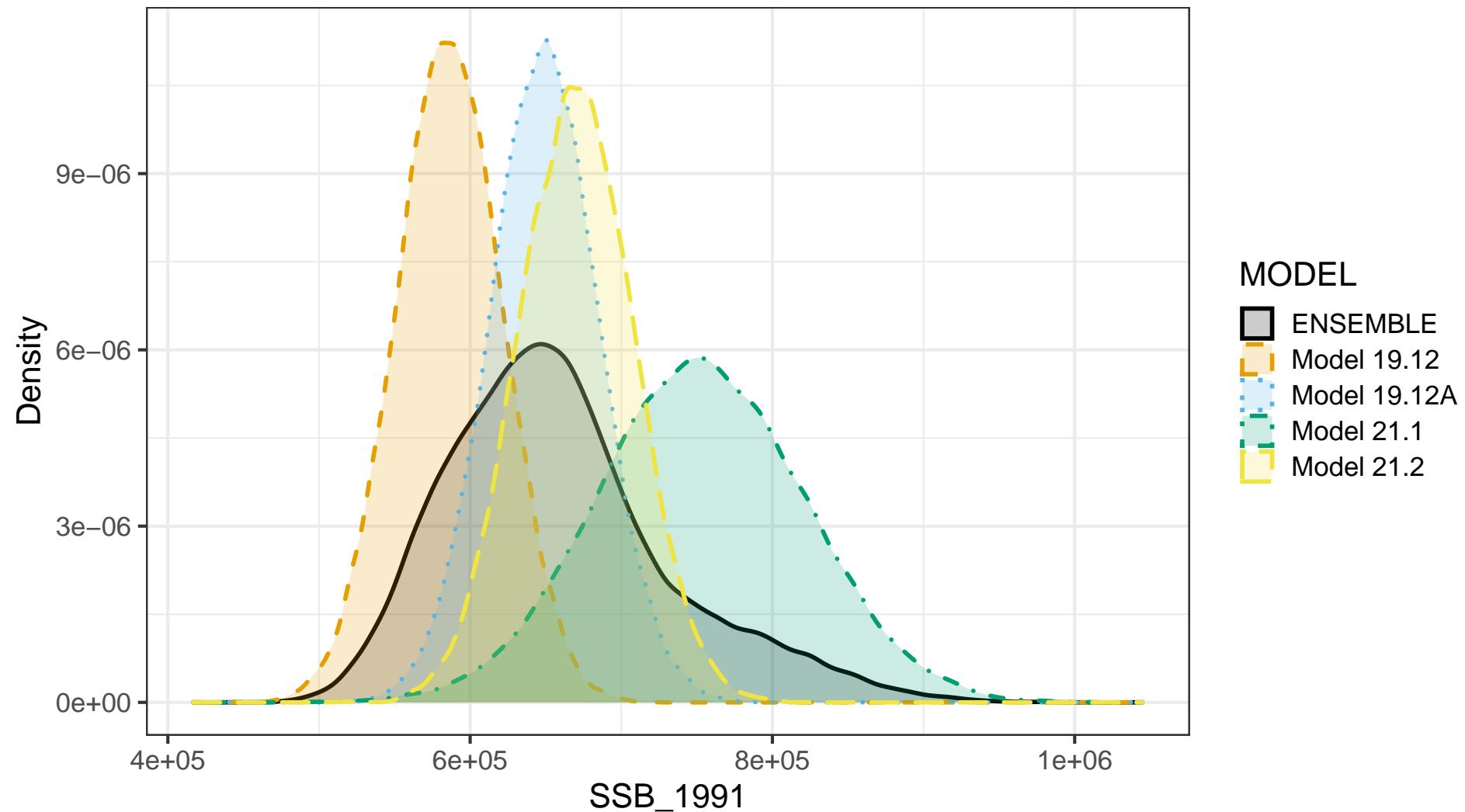
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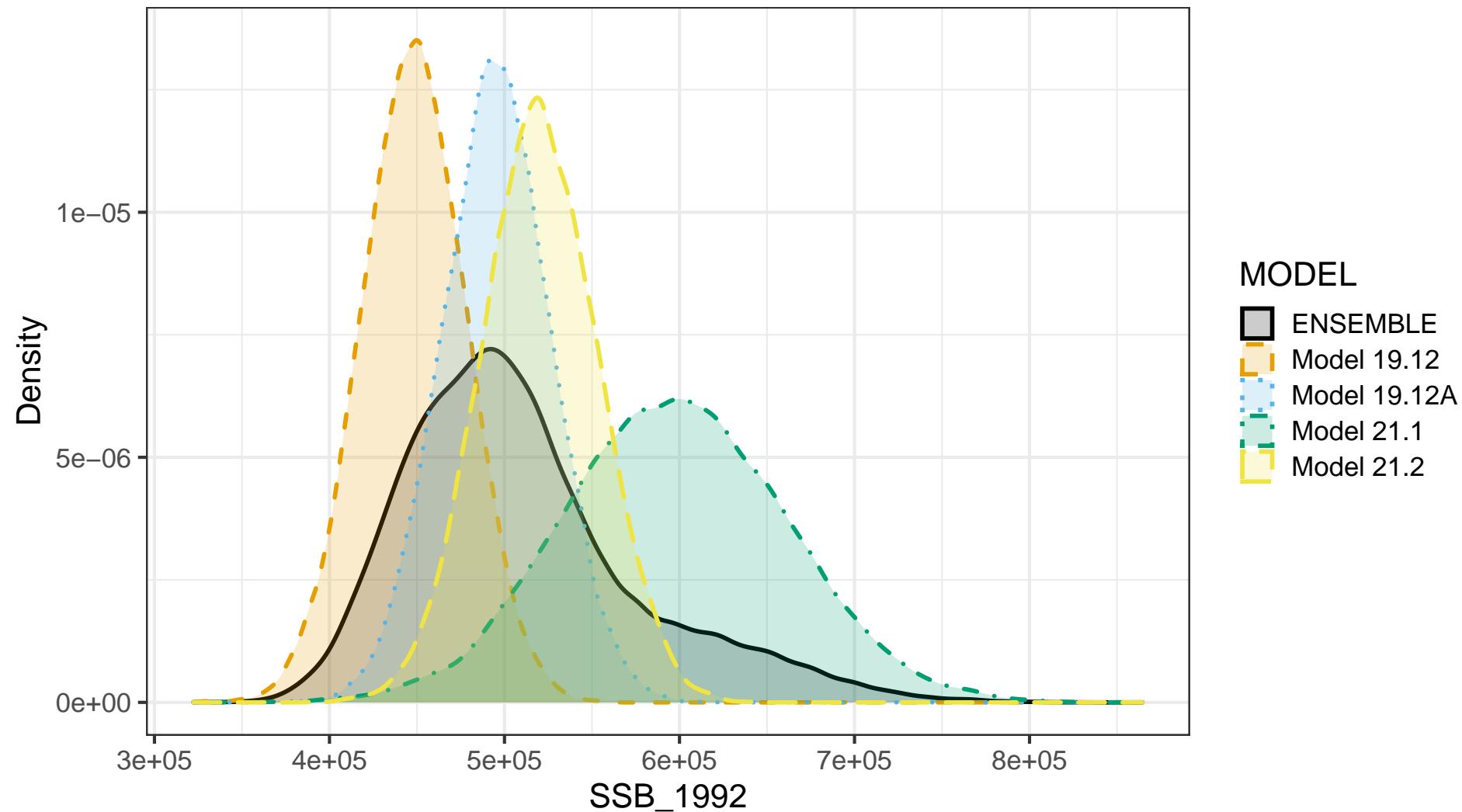
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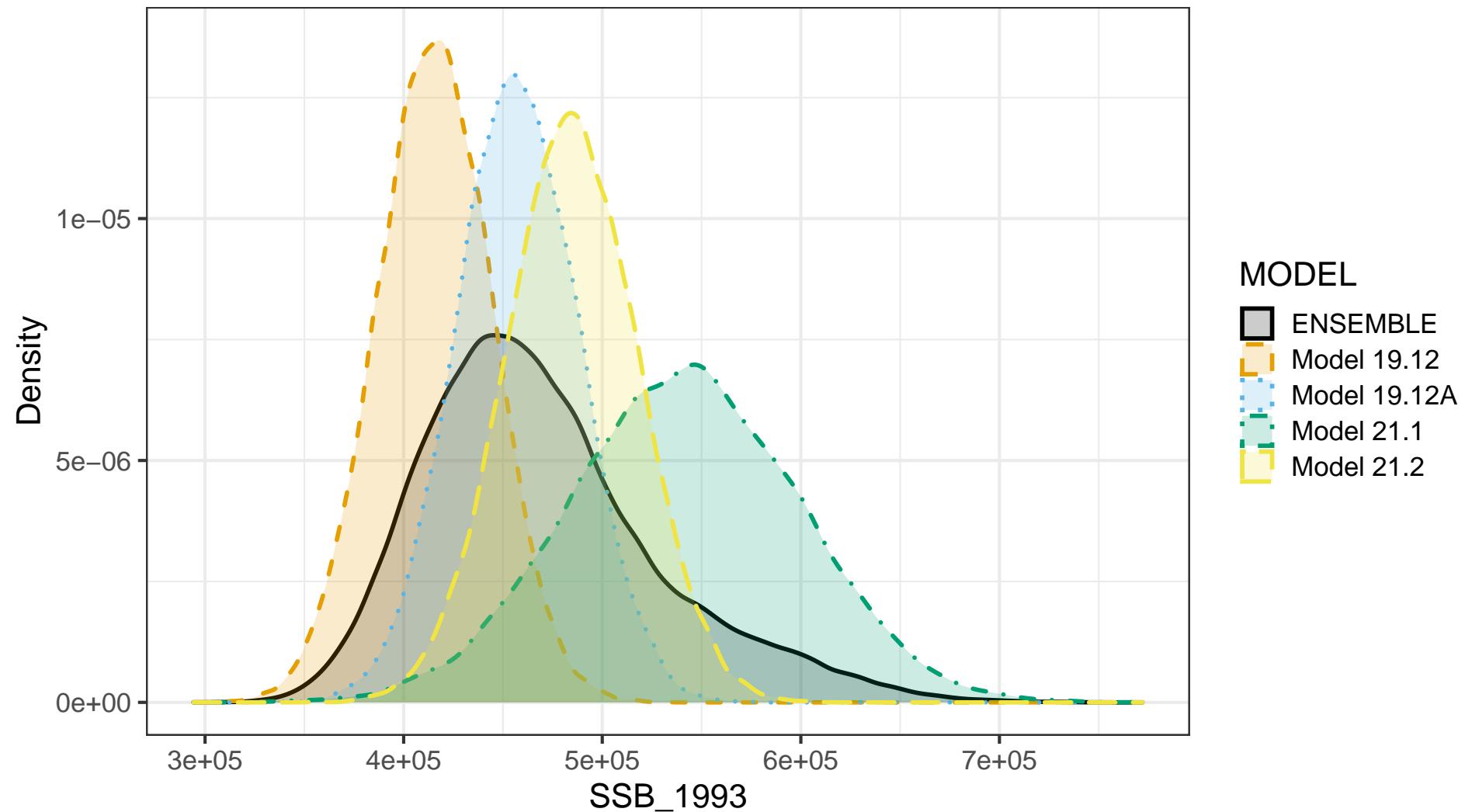
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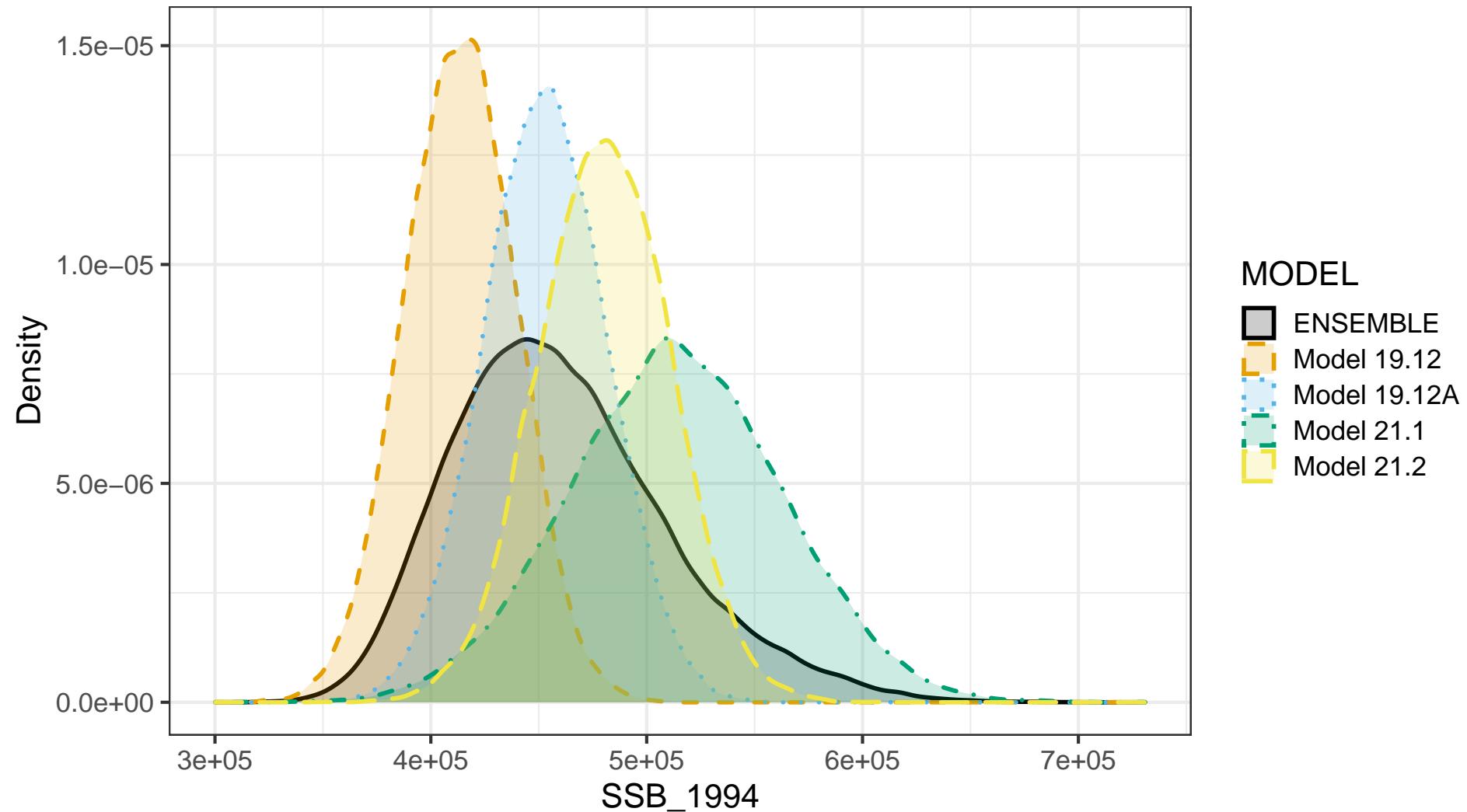
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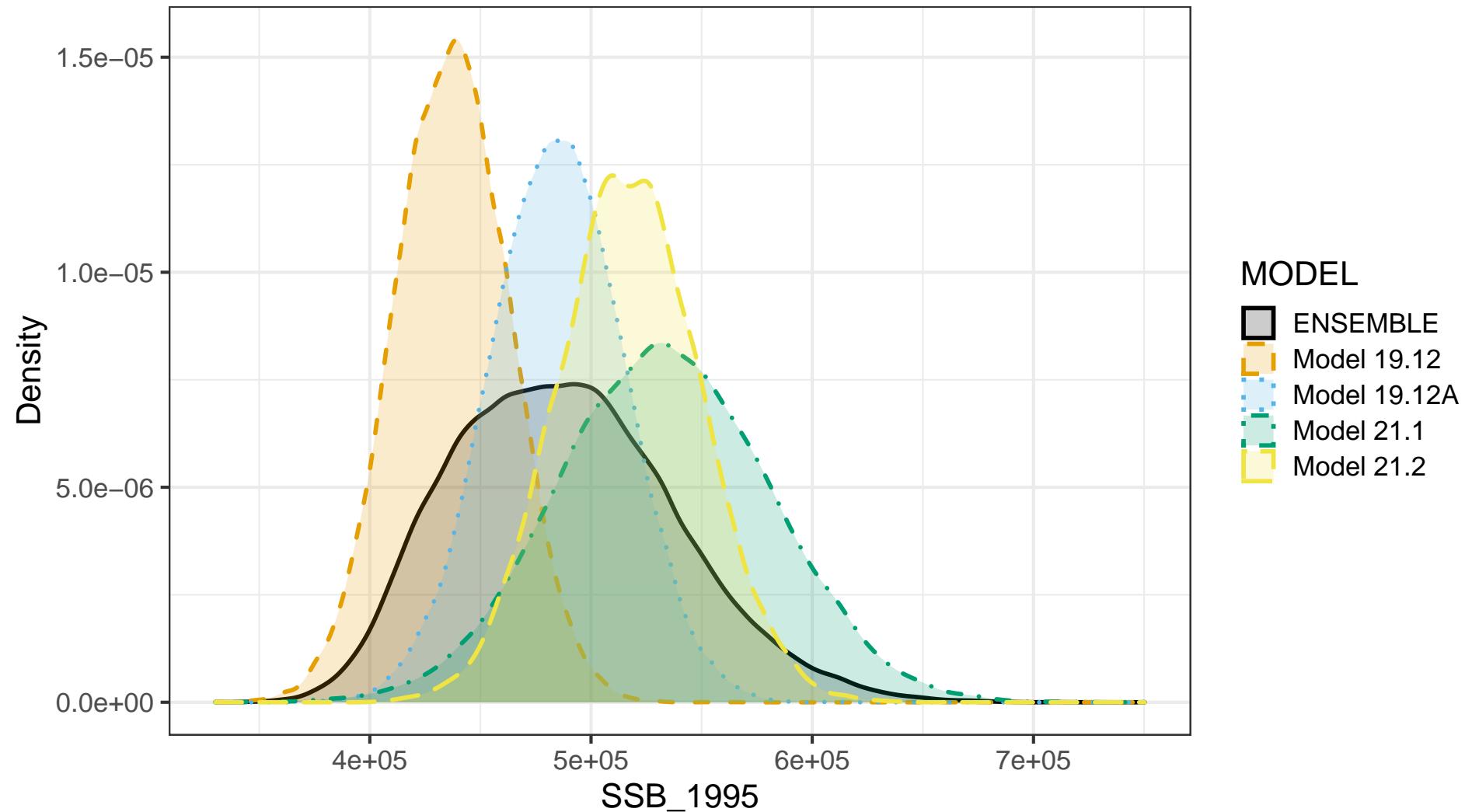
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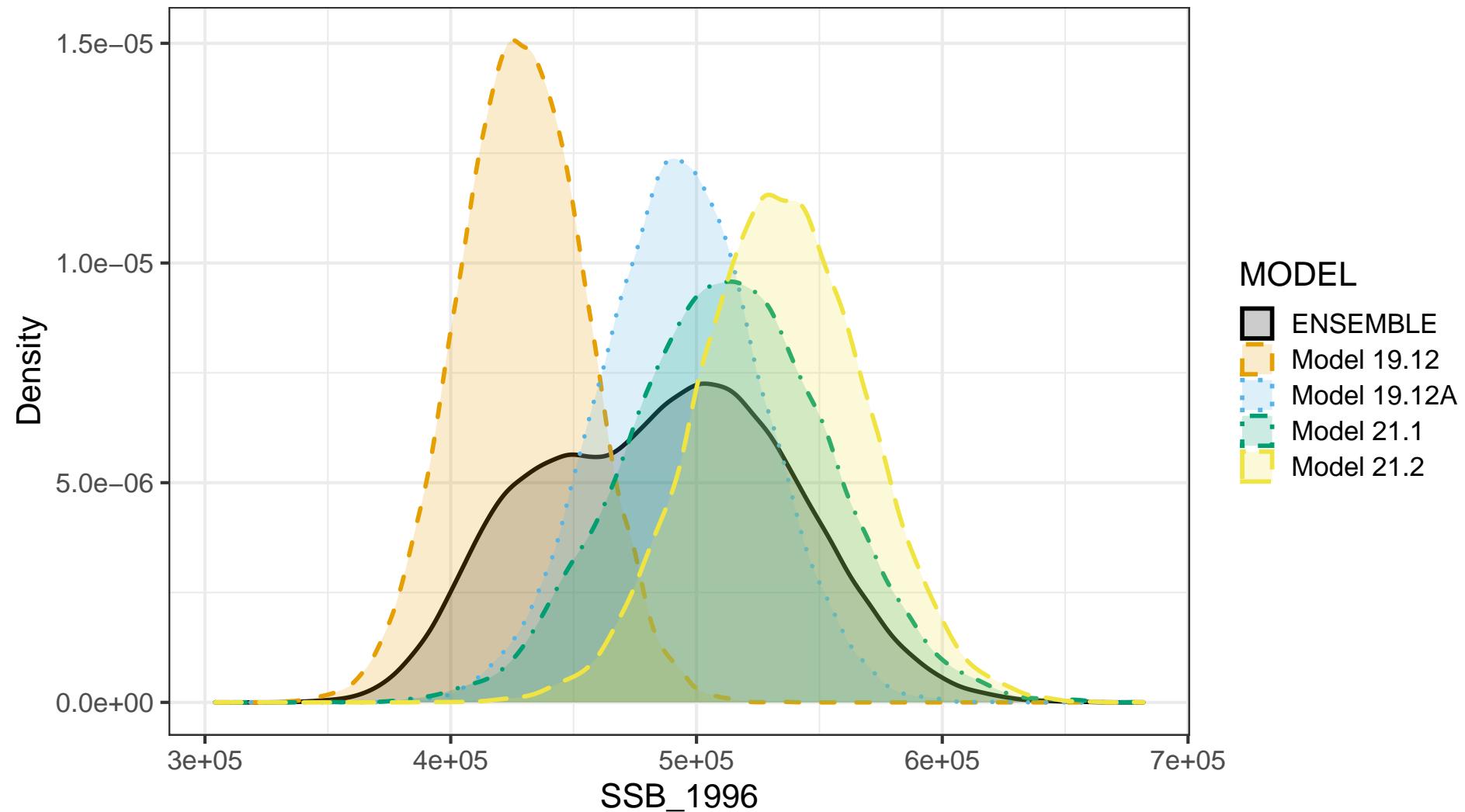
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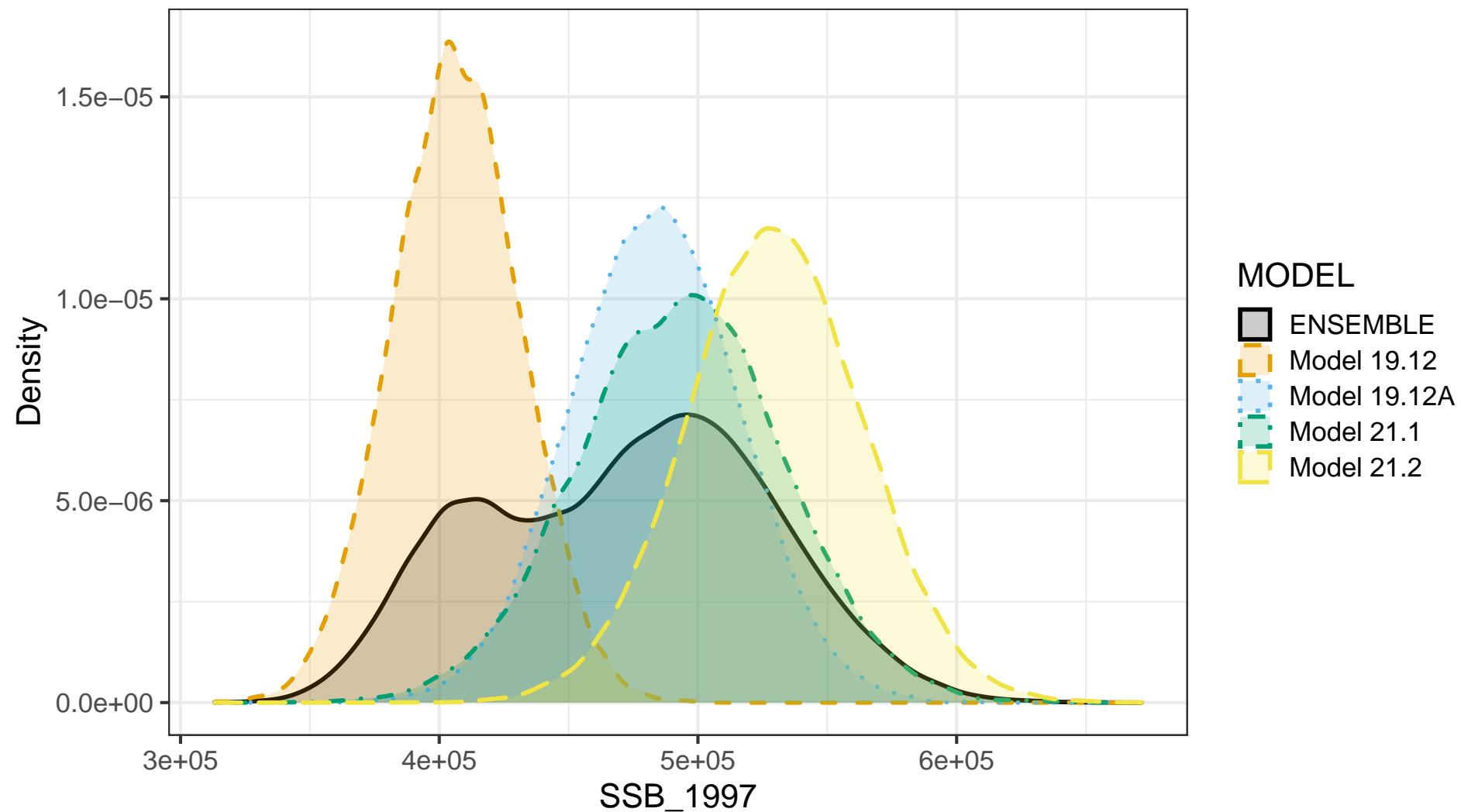
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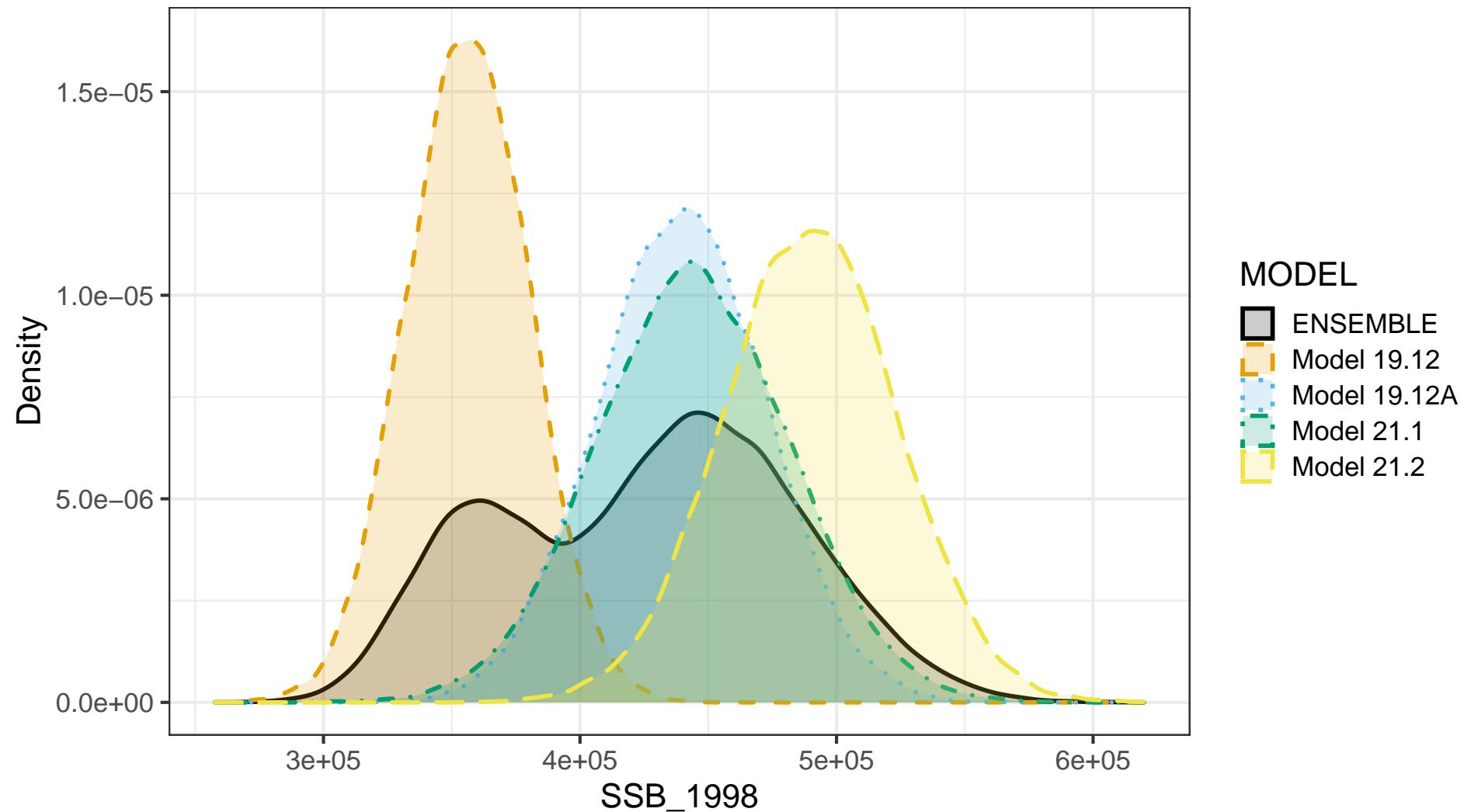
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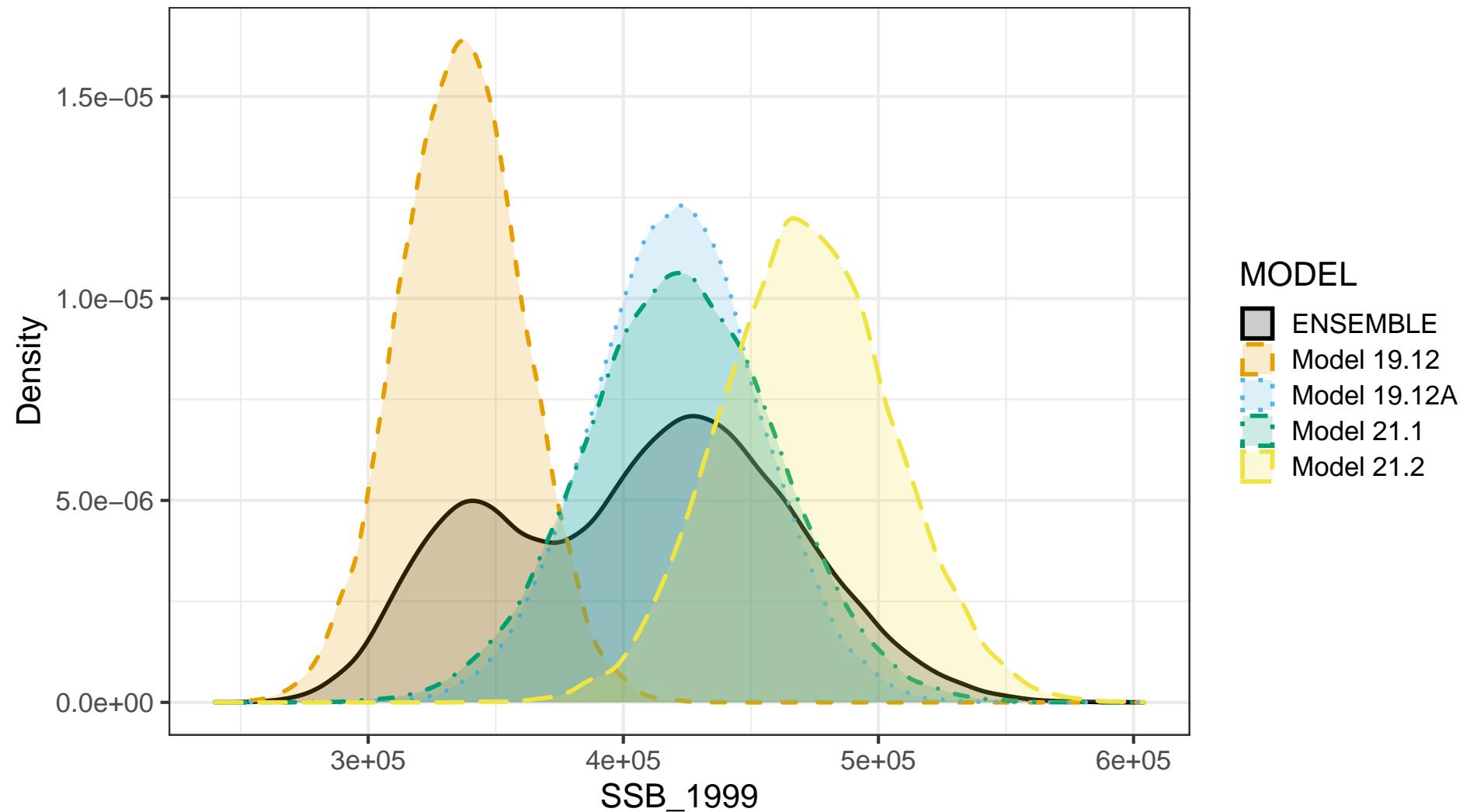
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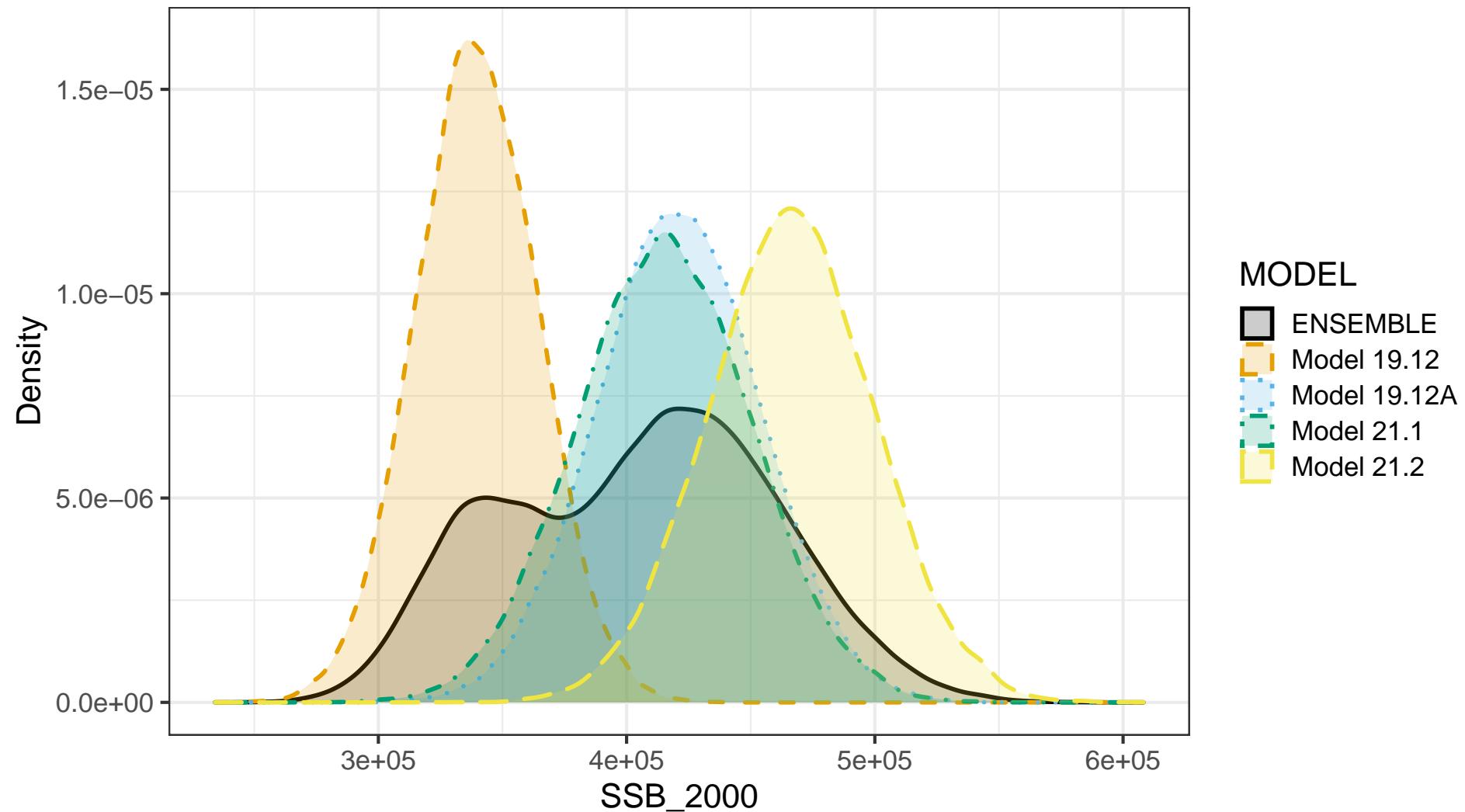
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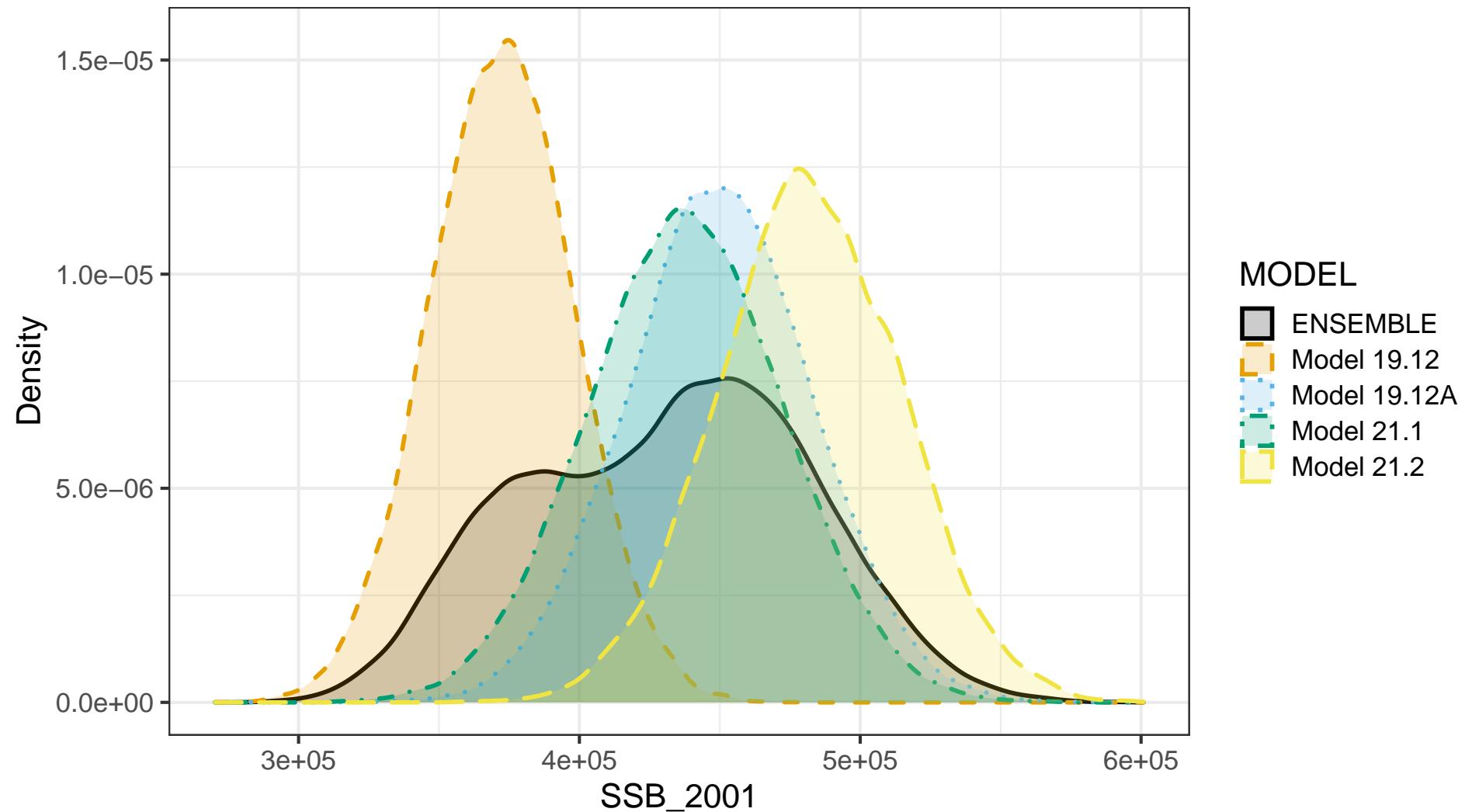
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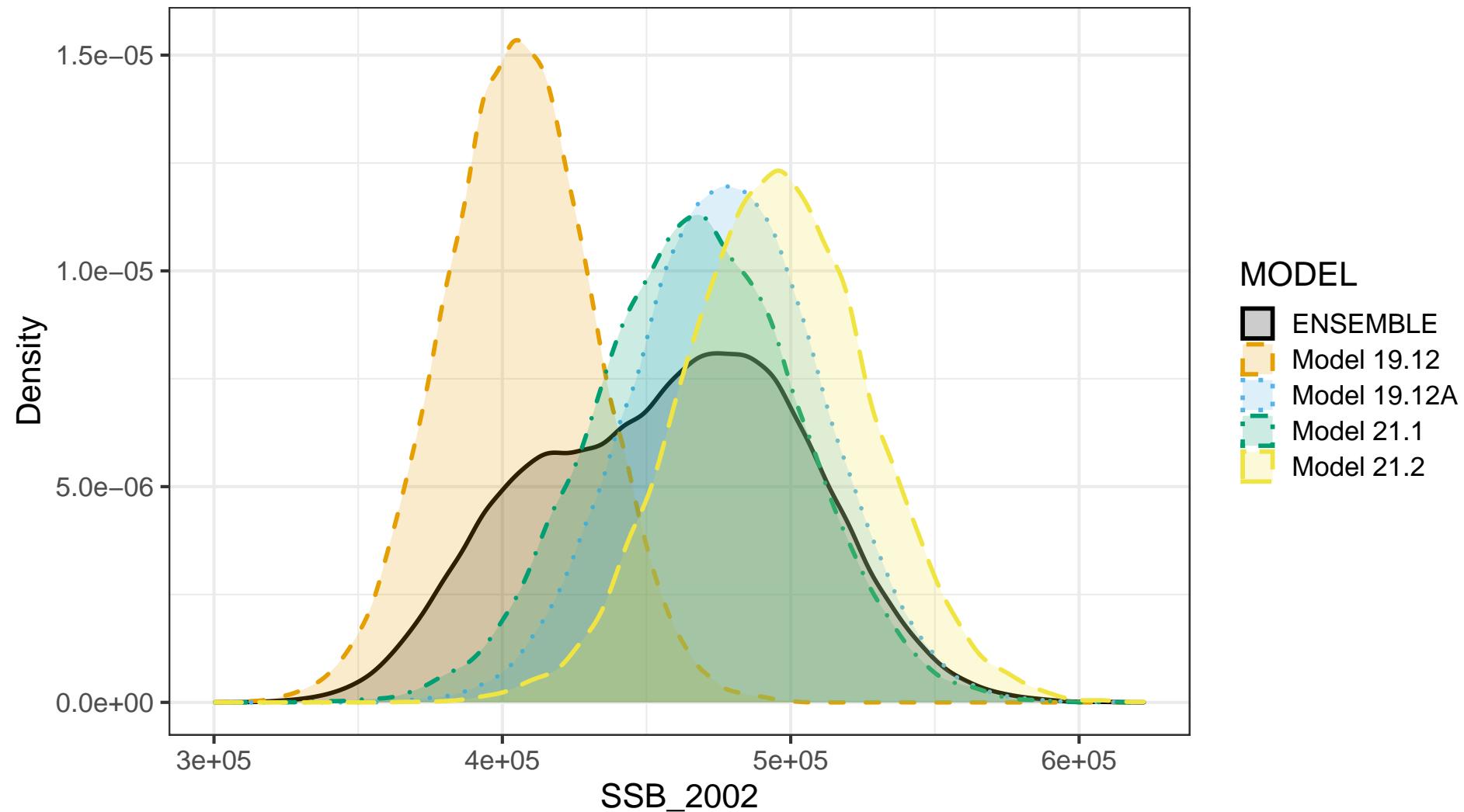
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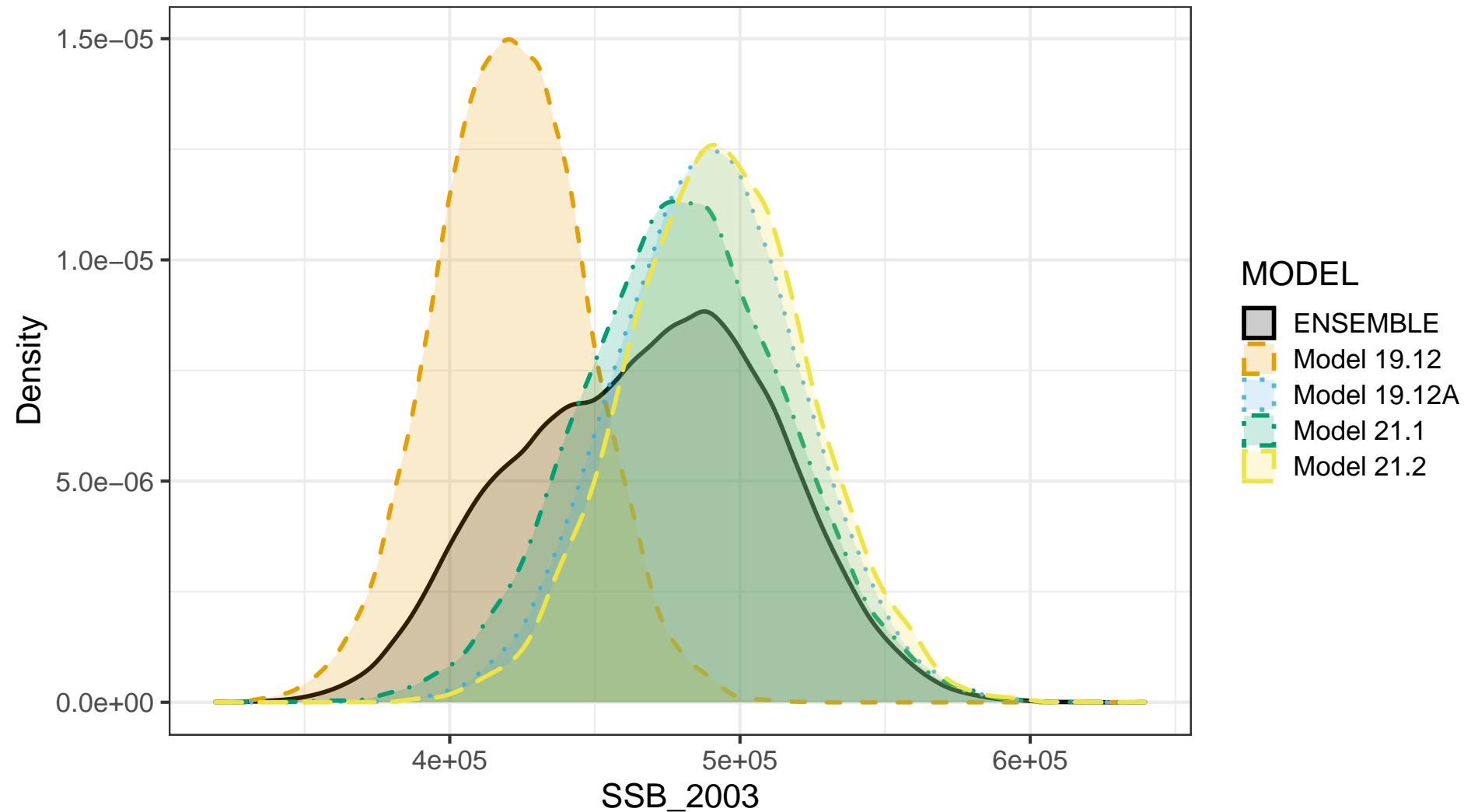
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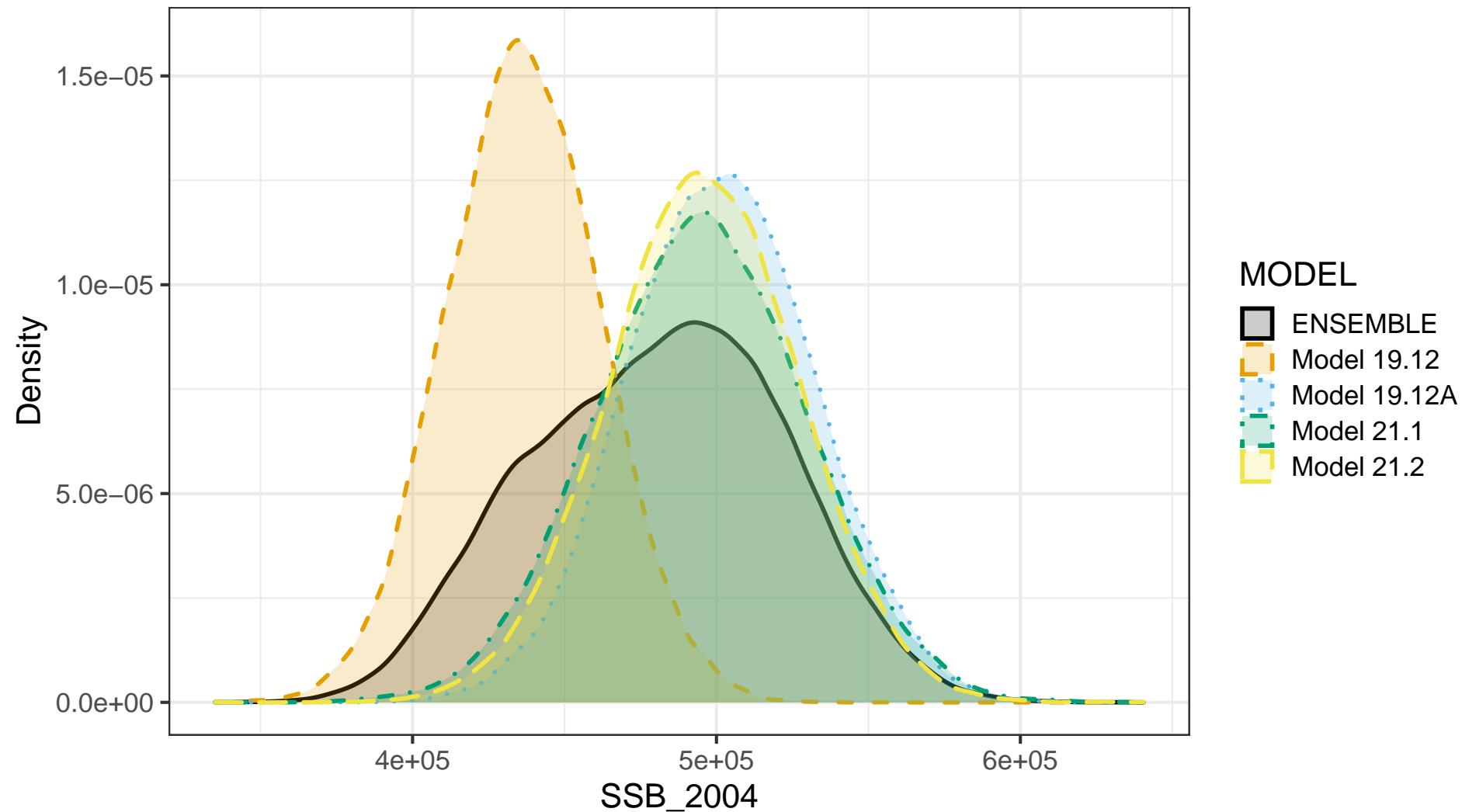
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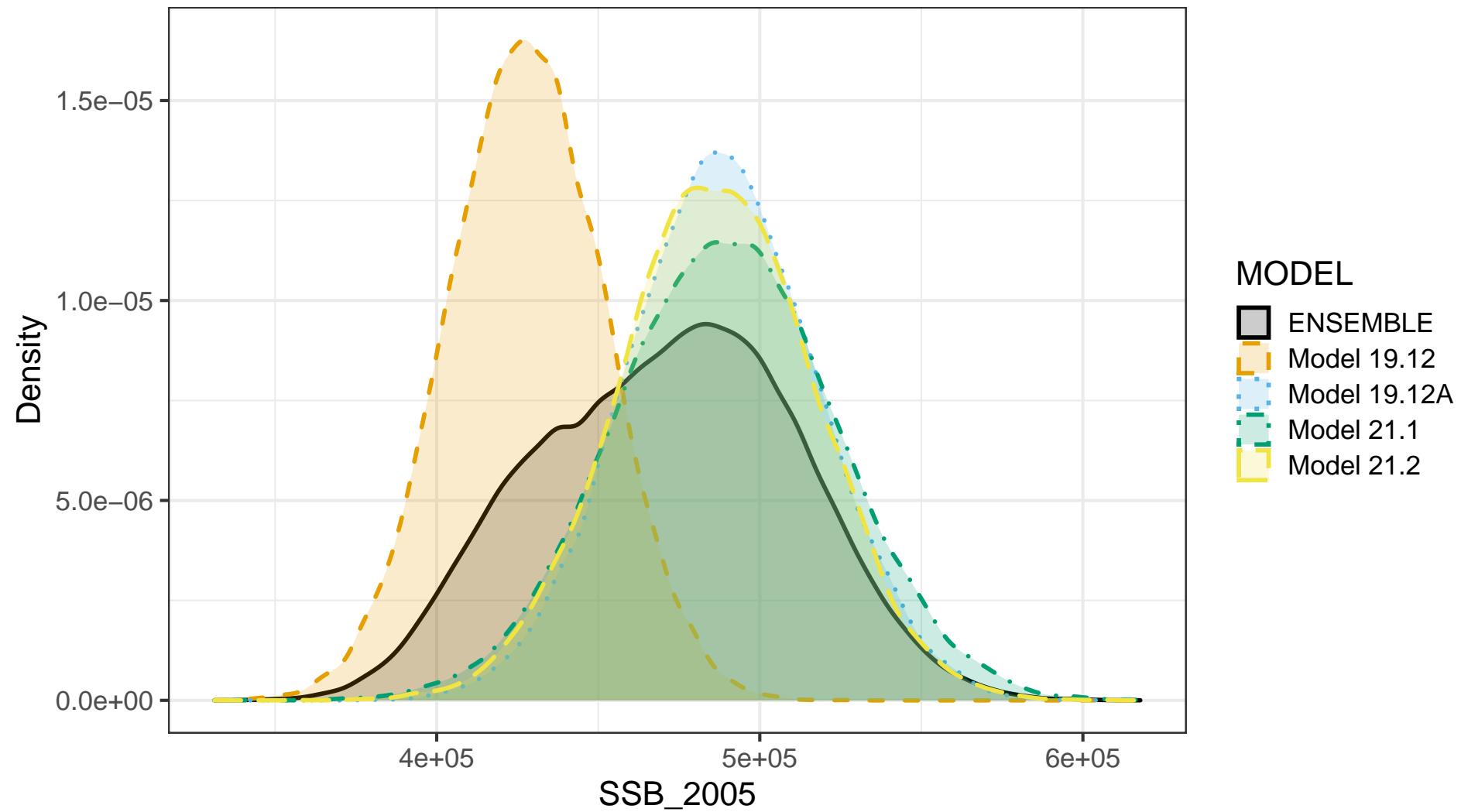
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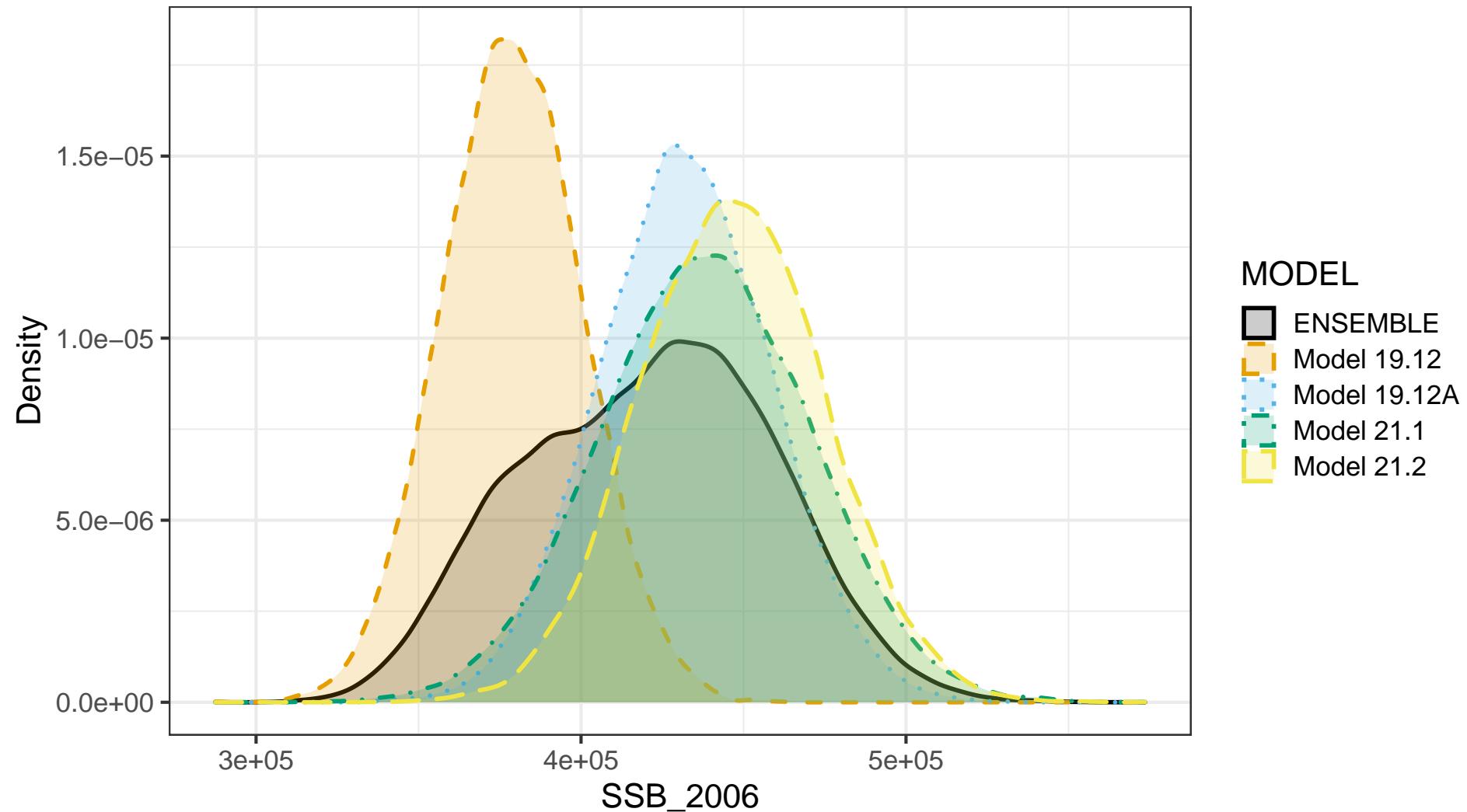
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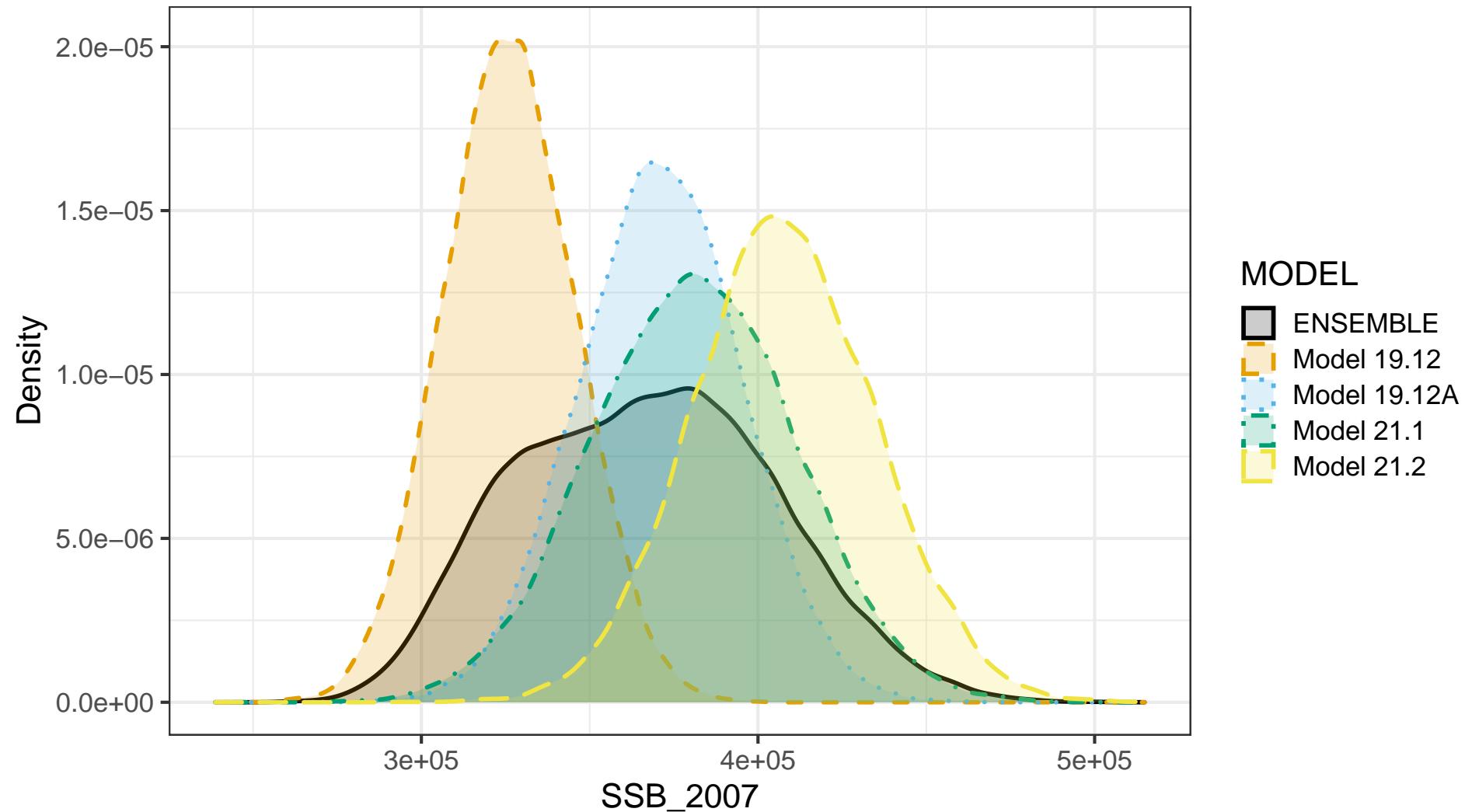
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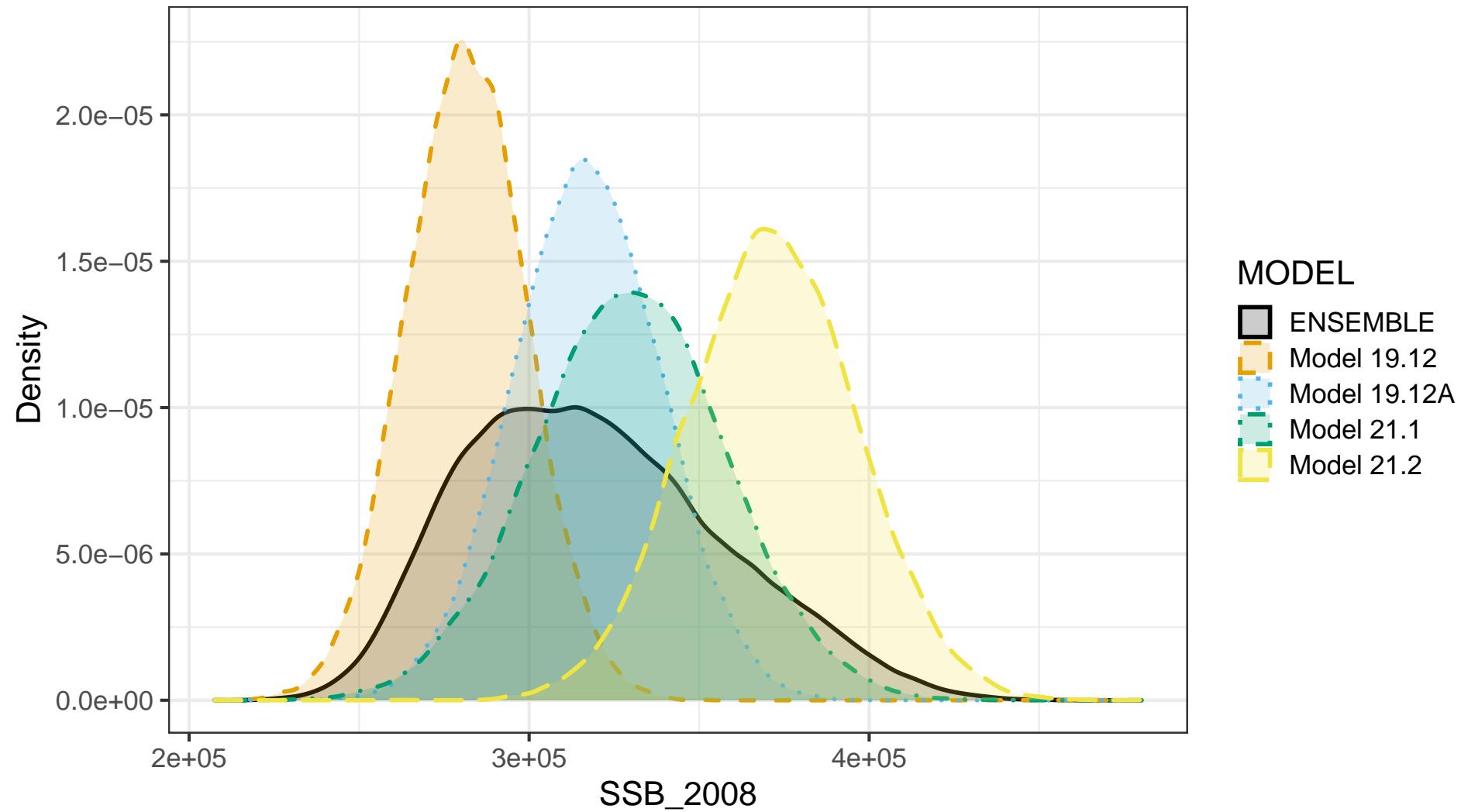
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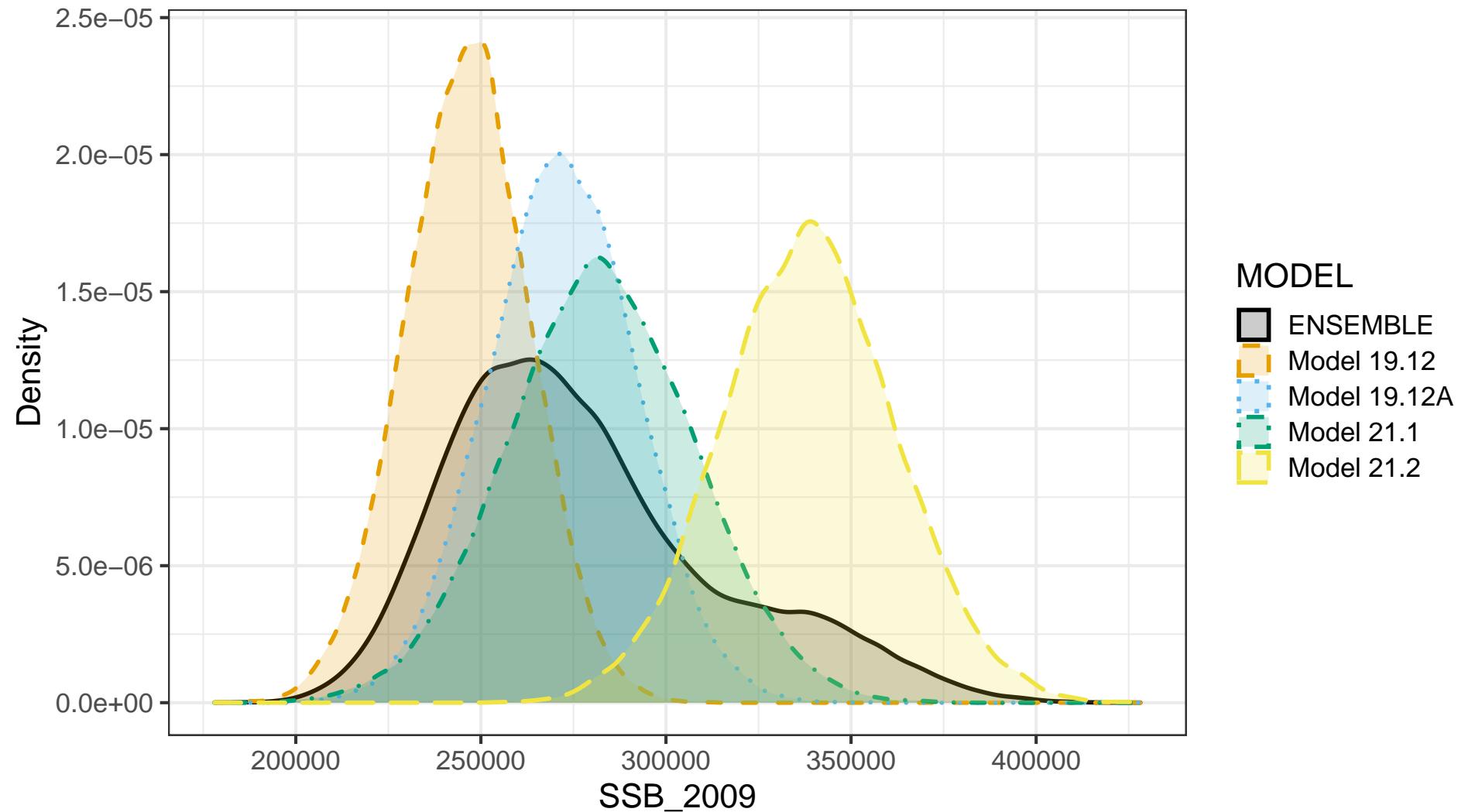
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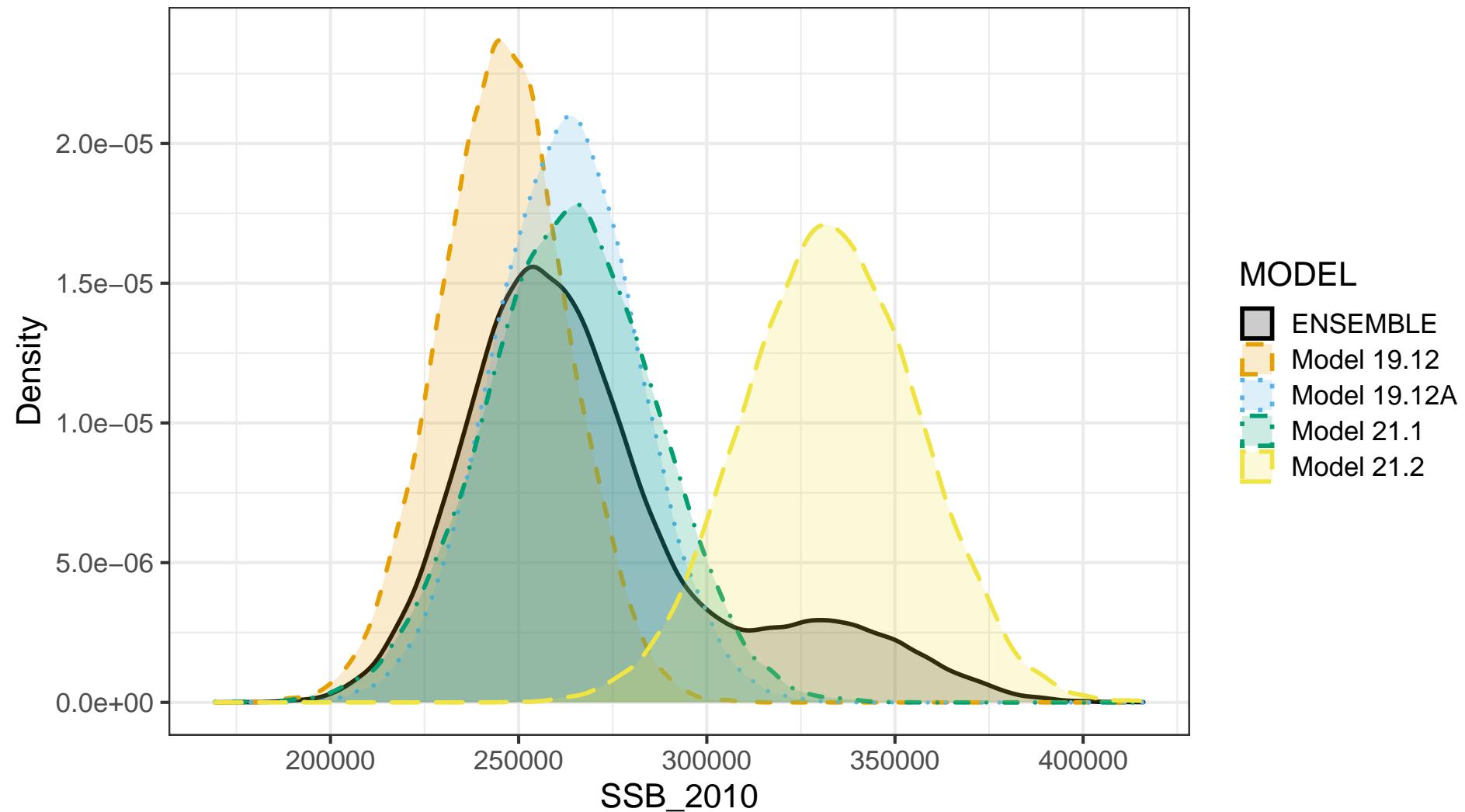
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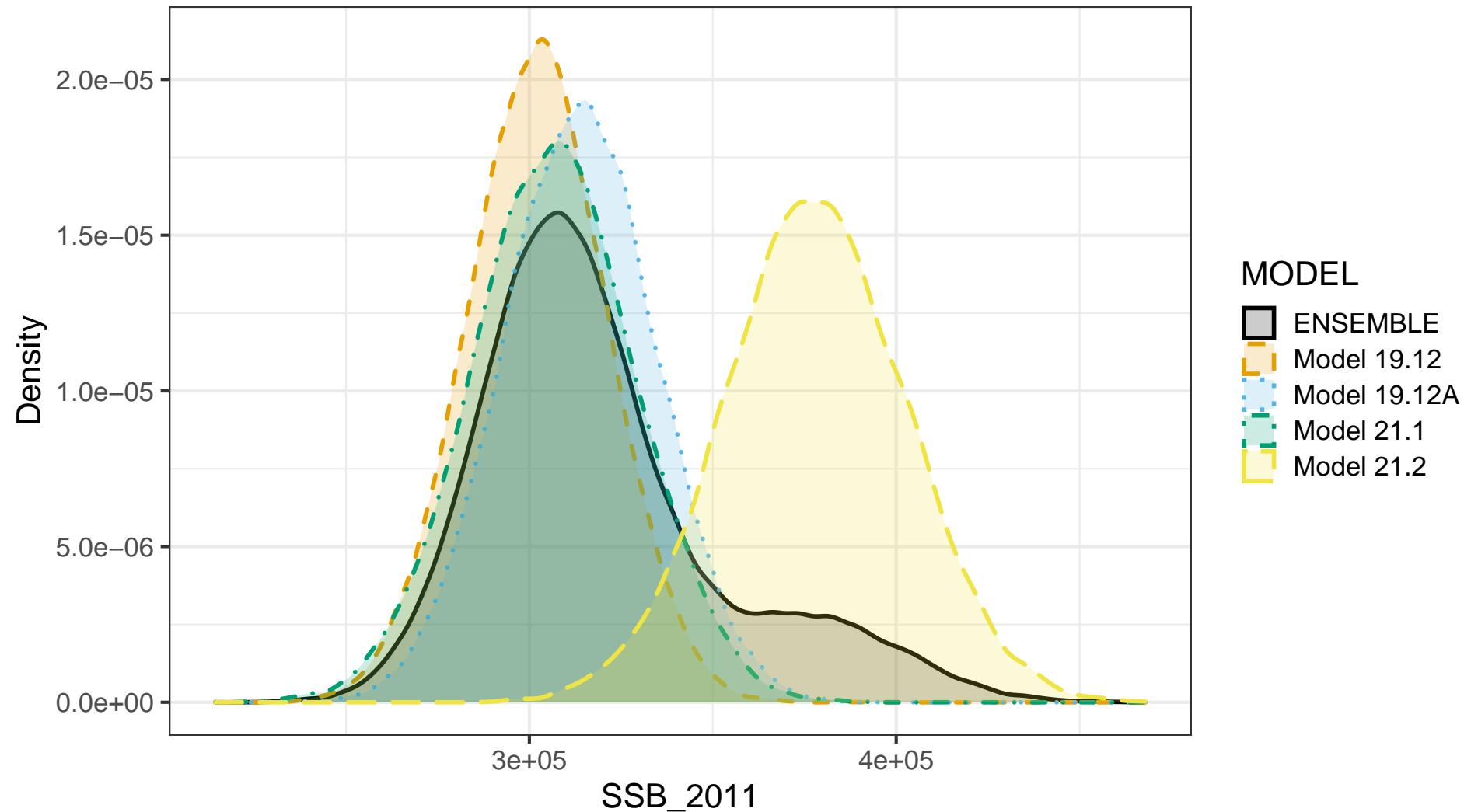
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SSB_2010



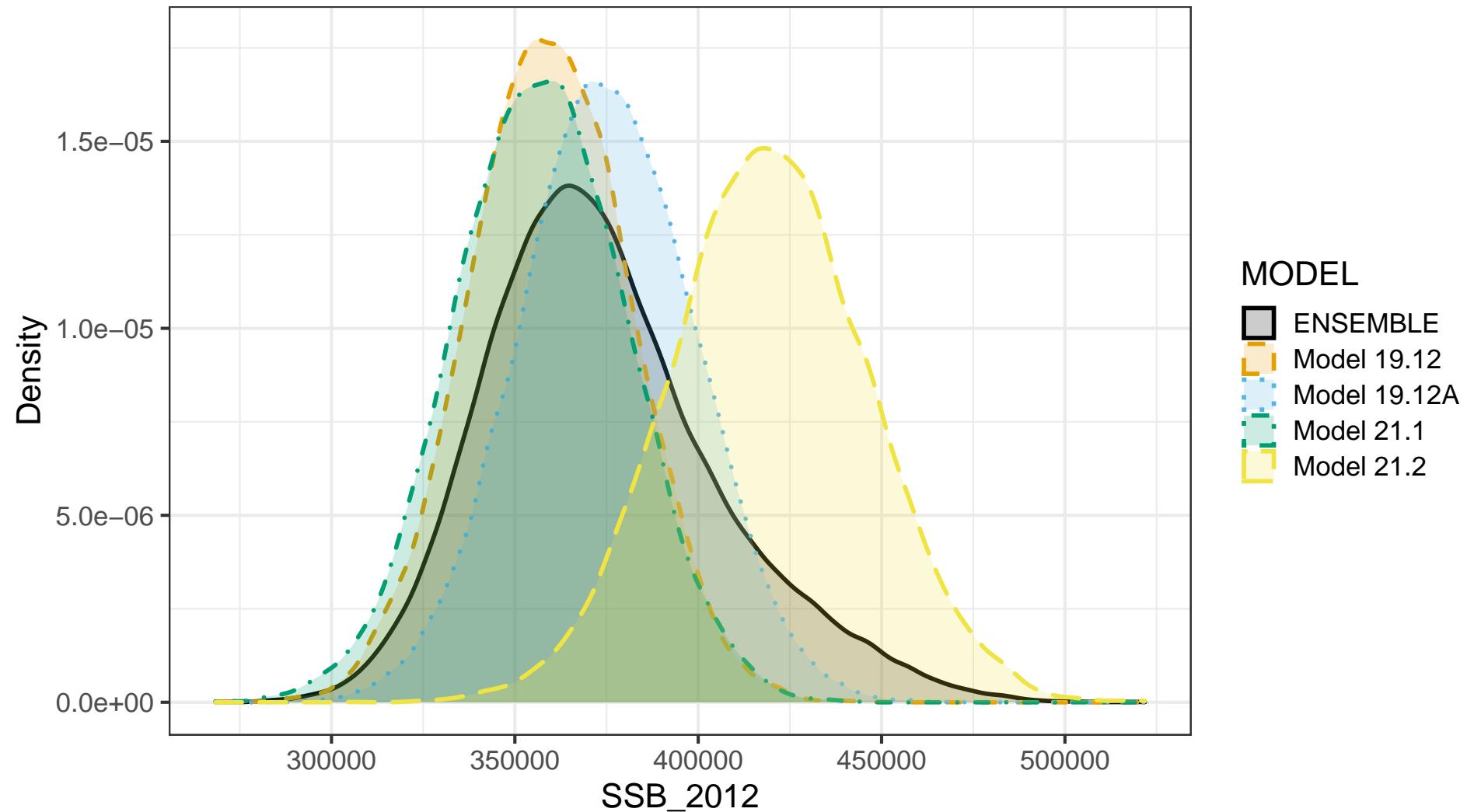
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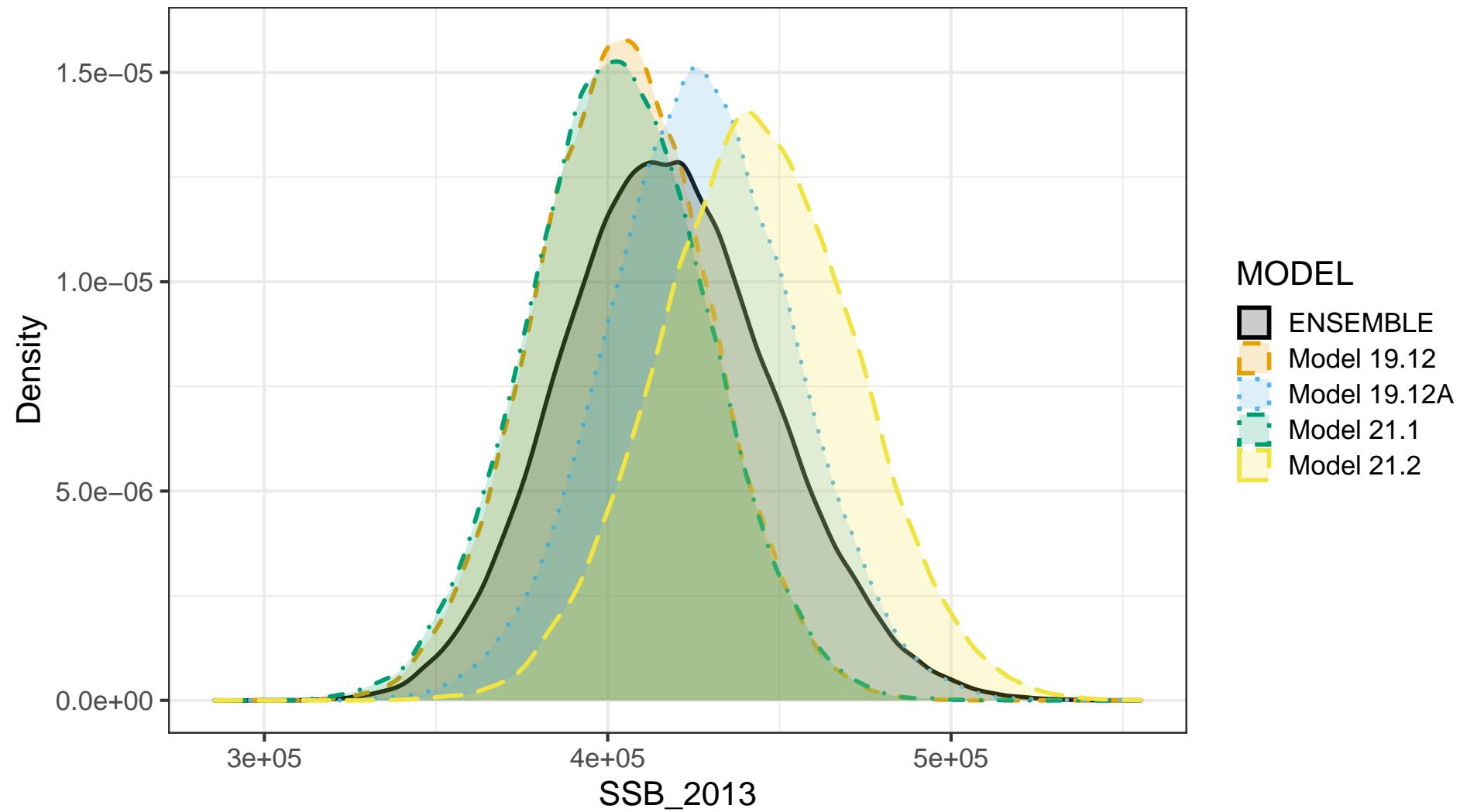
MODEL

- ENSEMBLE
- Model 19.12
- Model 19.12A
- Model 21.1
- Model 21.2

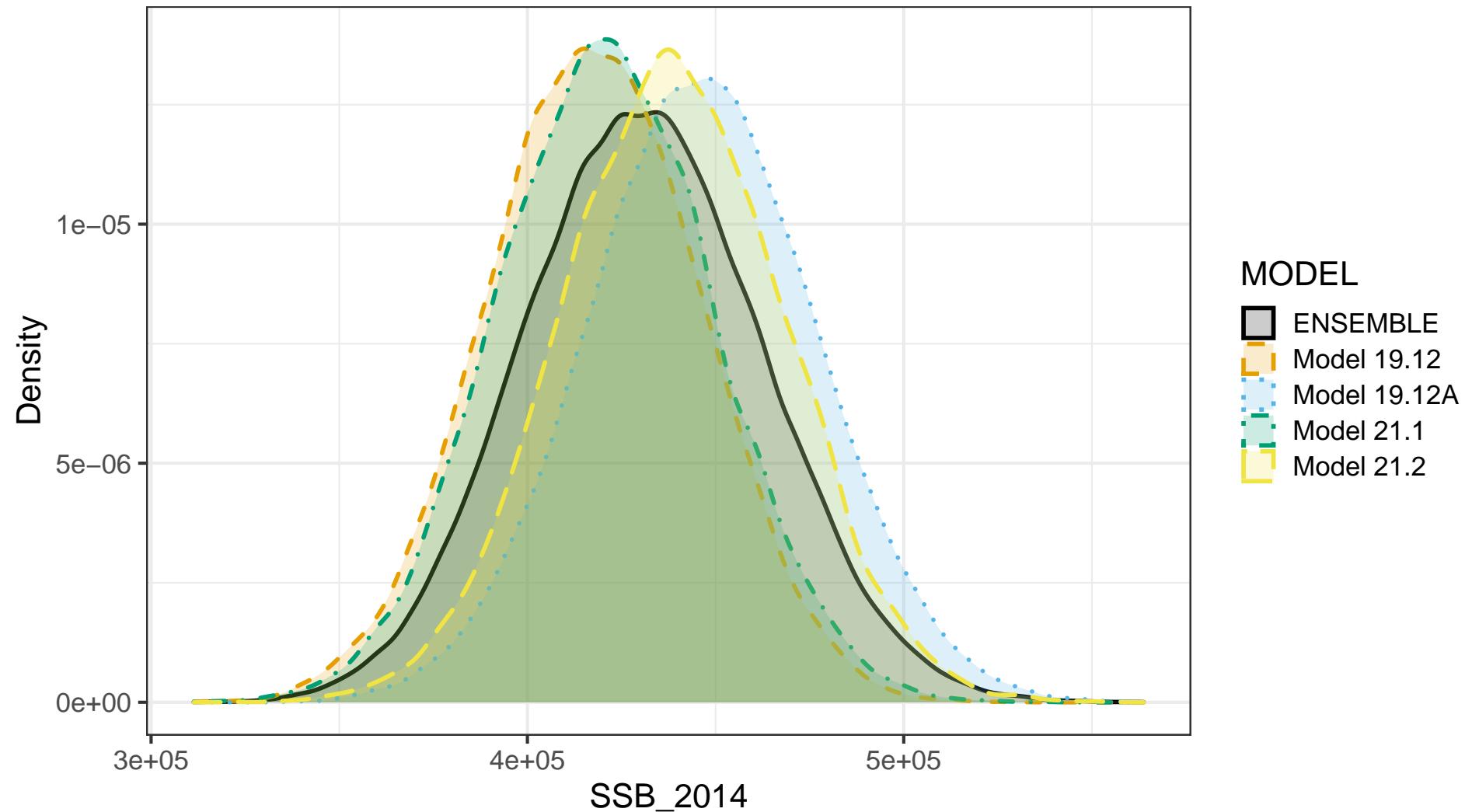
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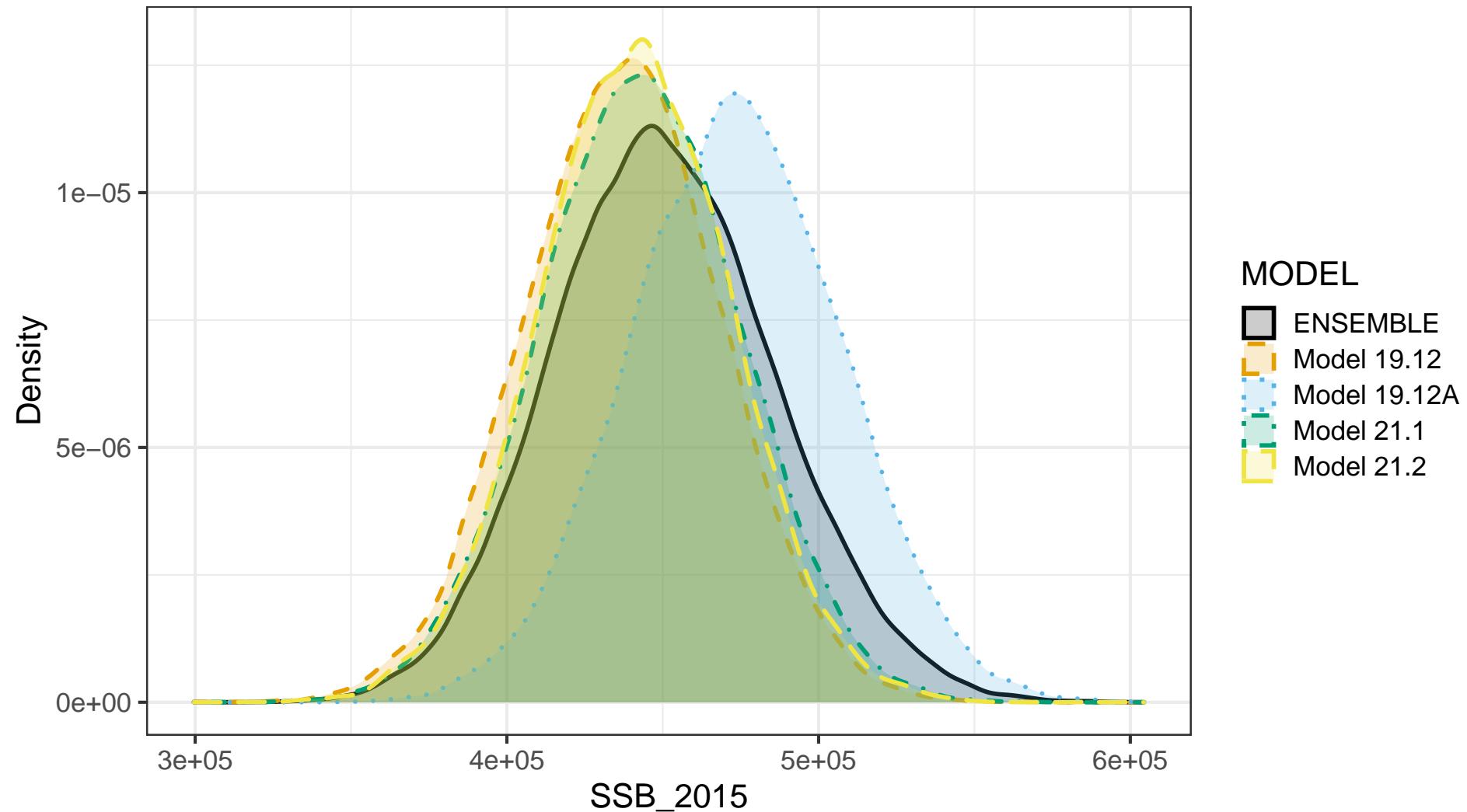
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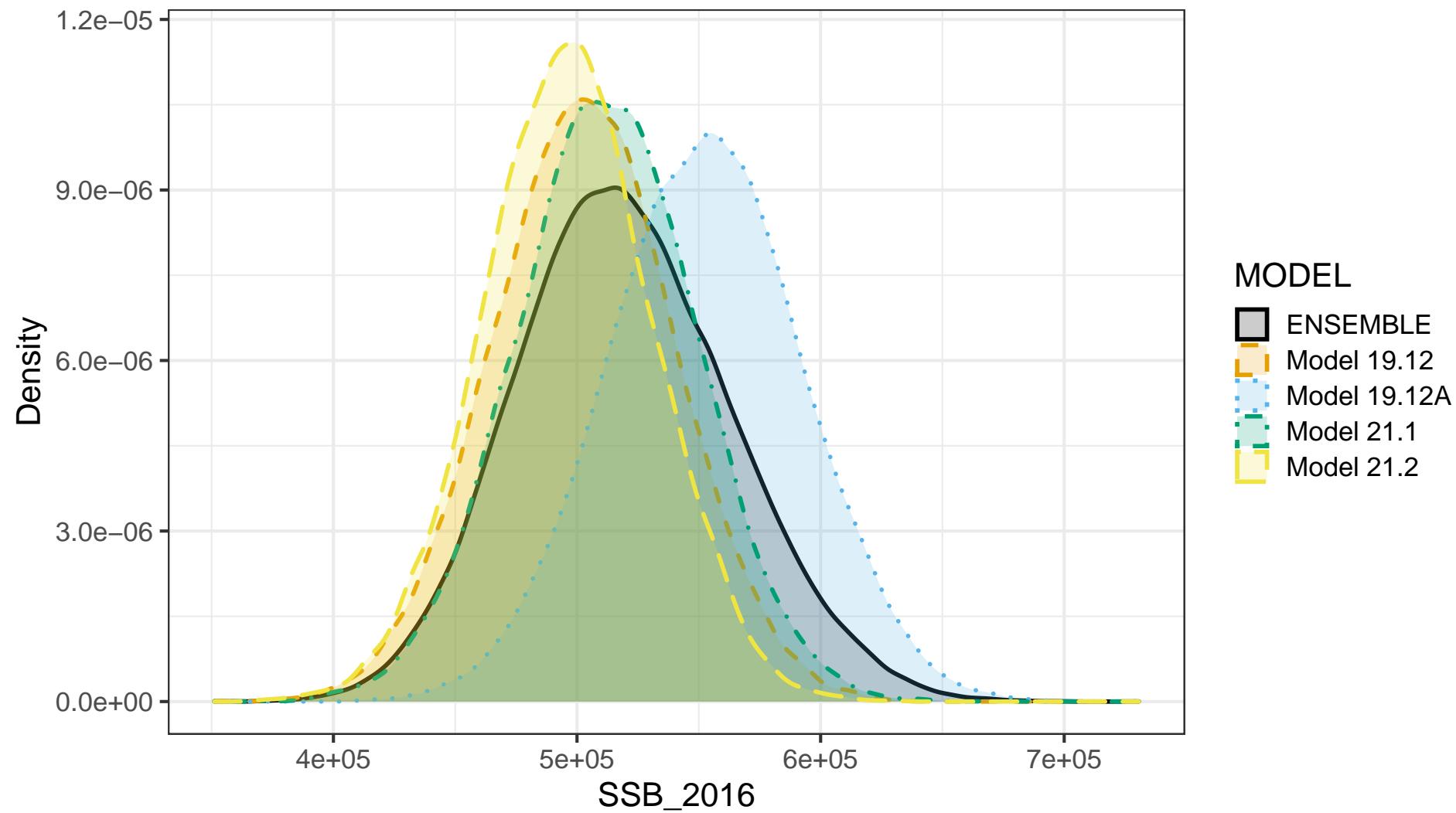
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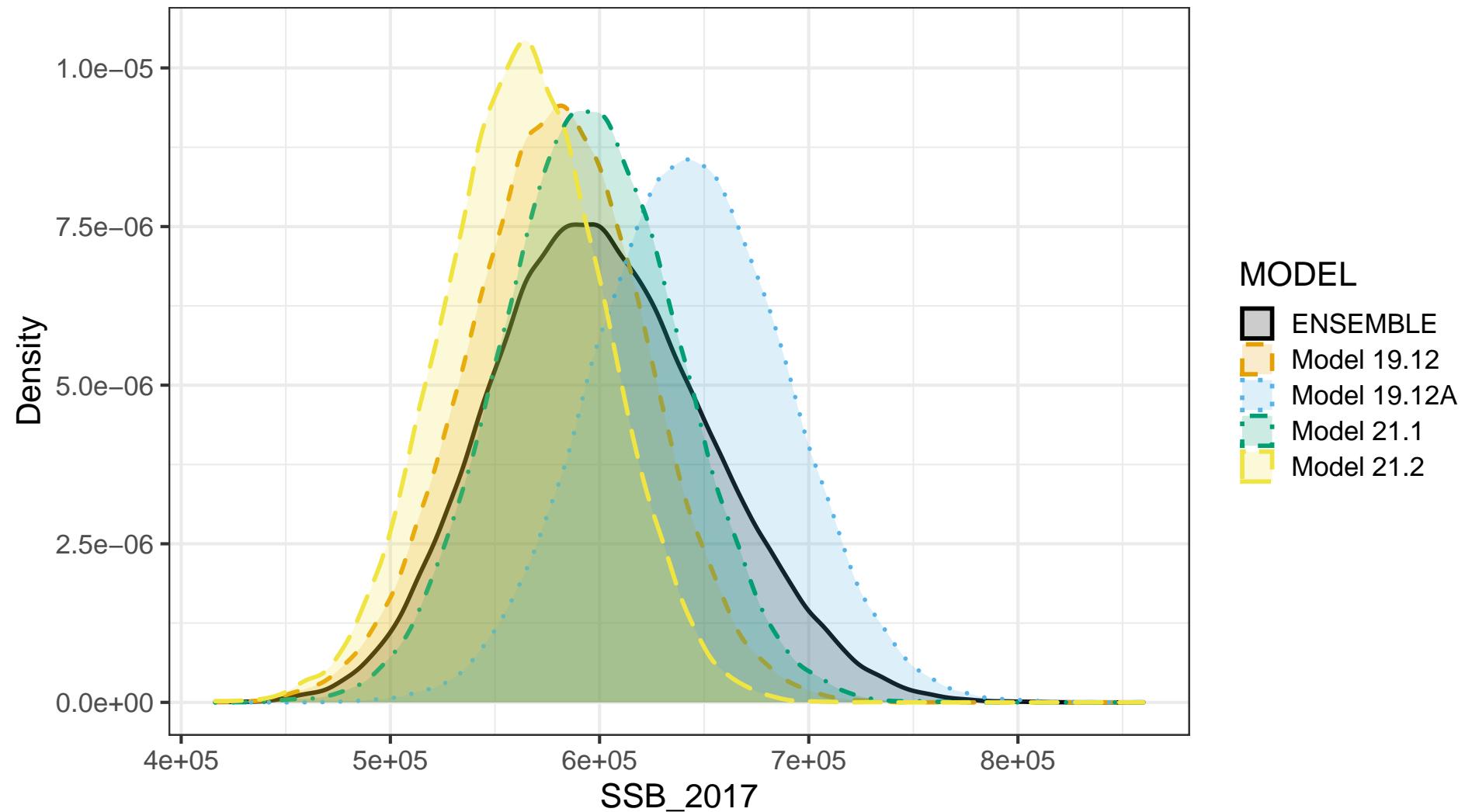
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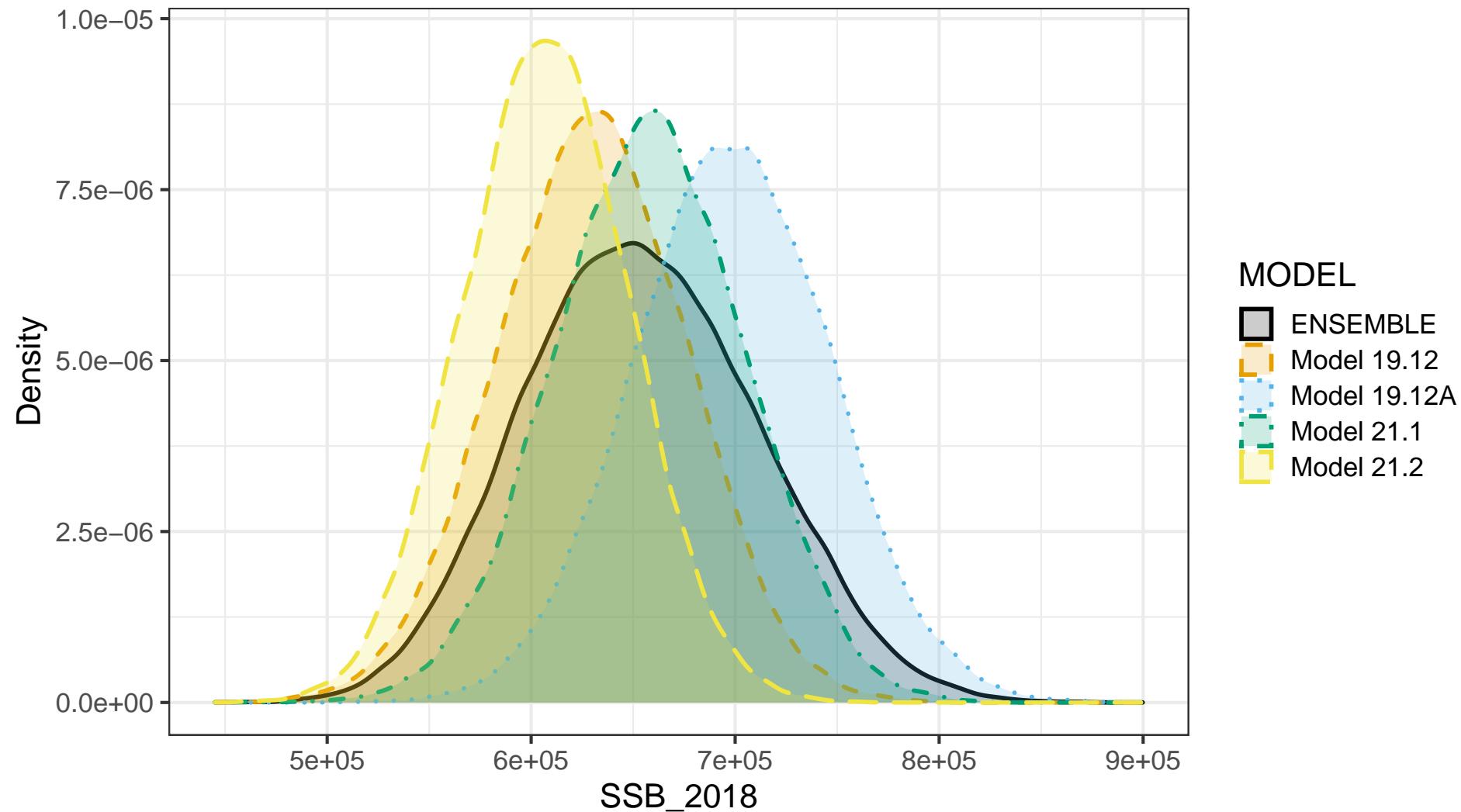
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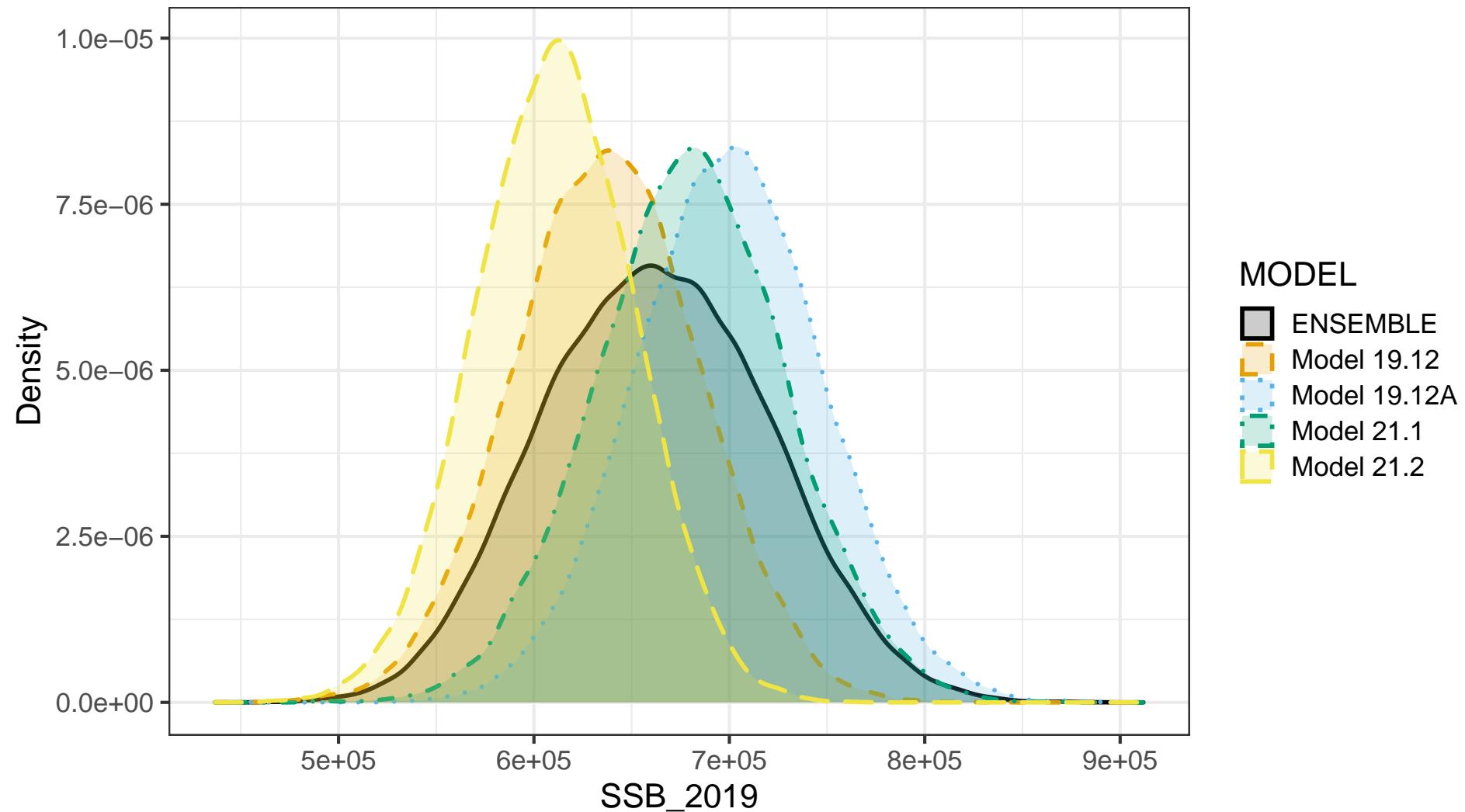
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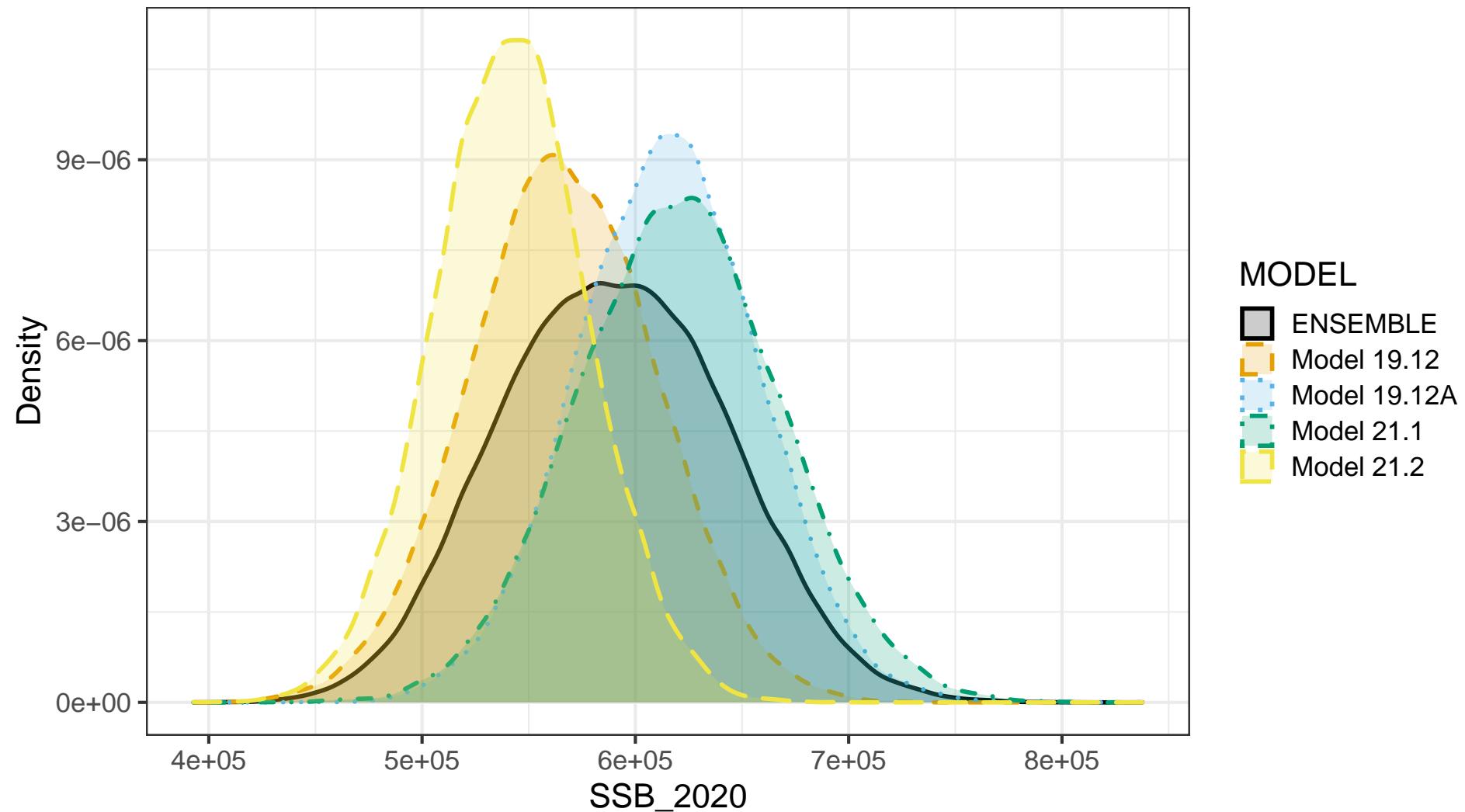
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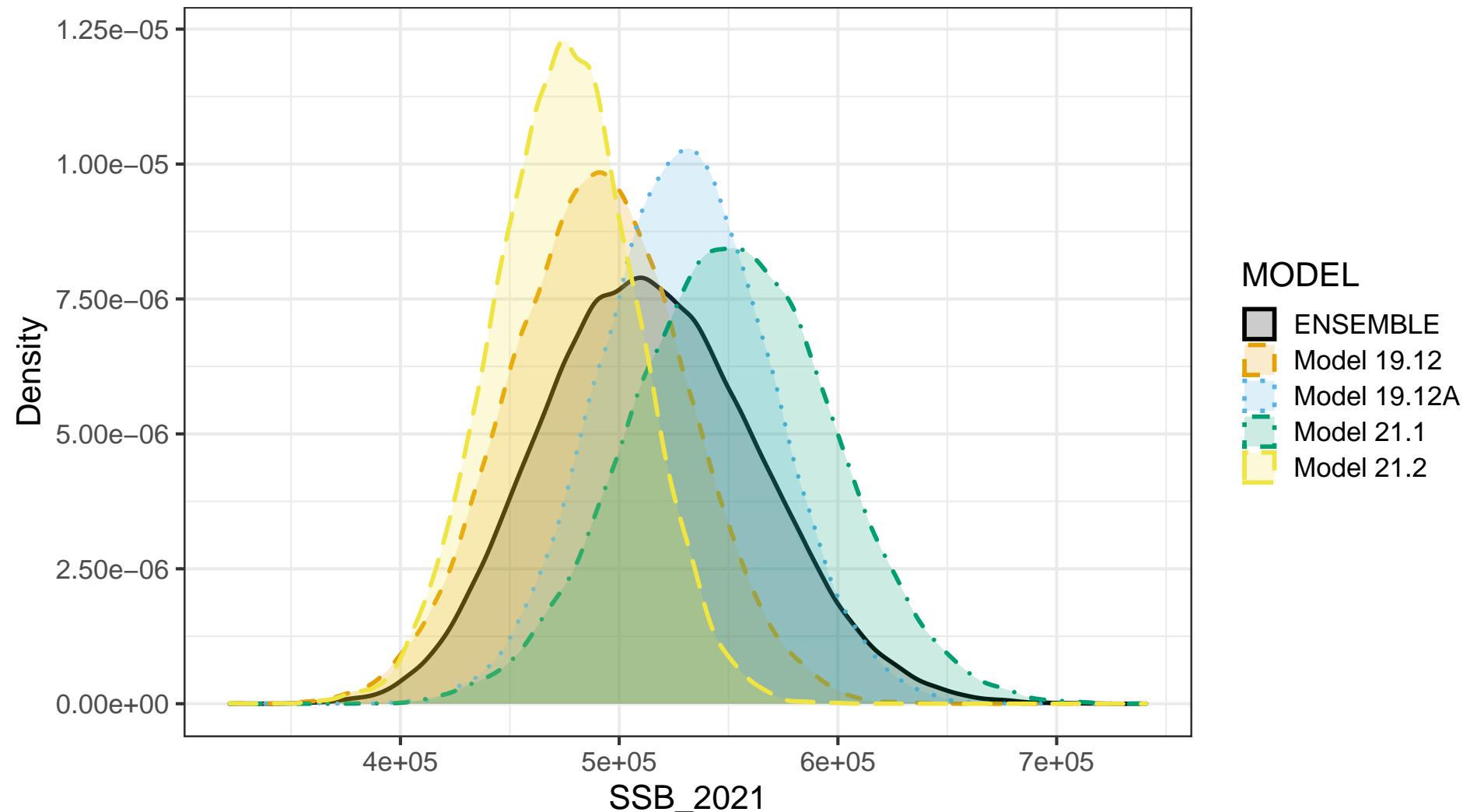
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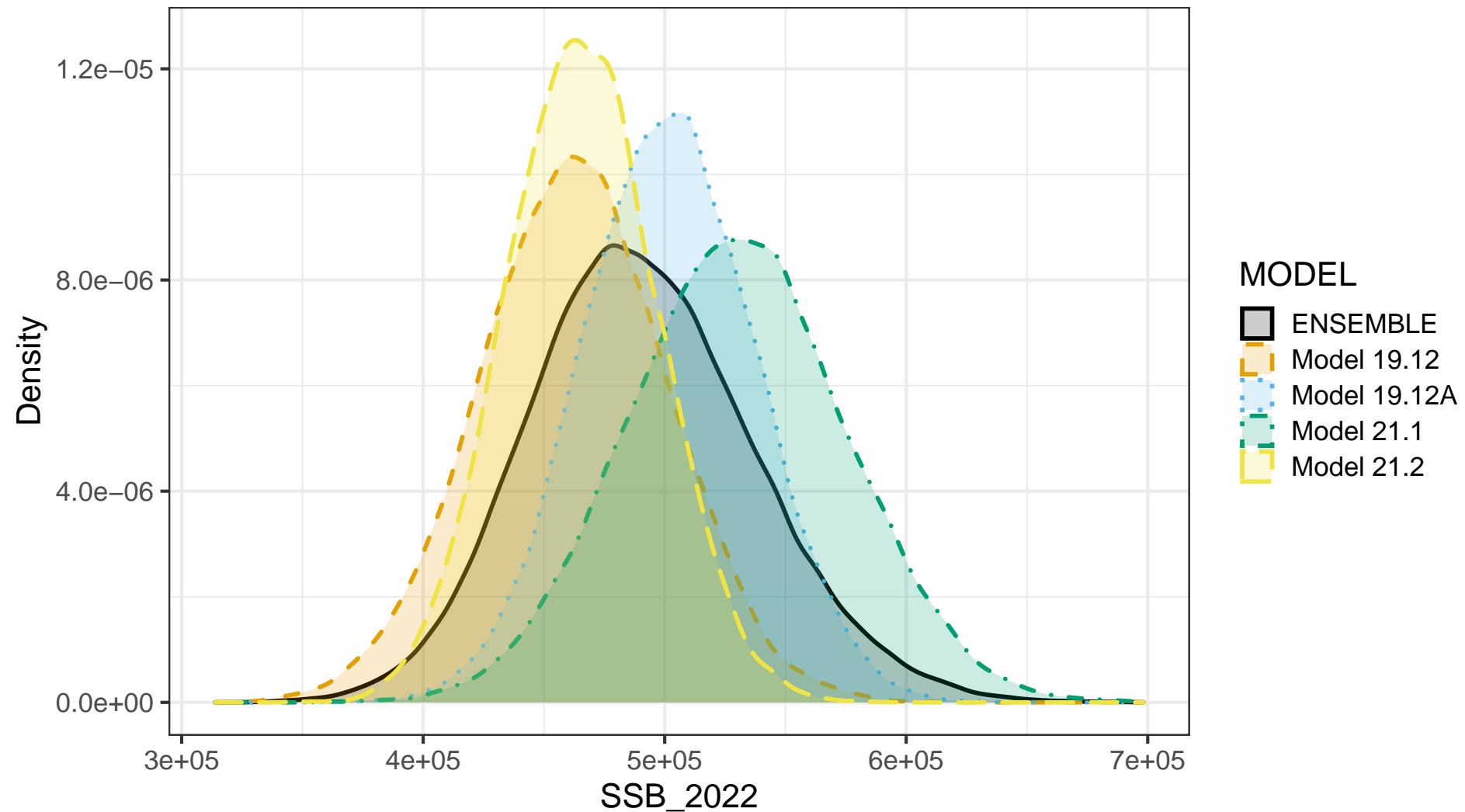
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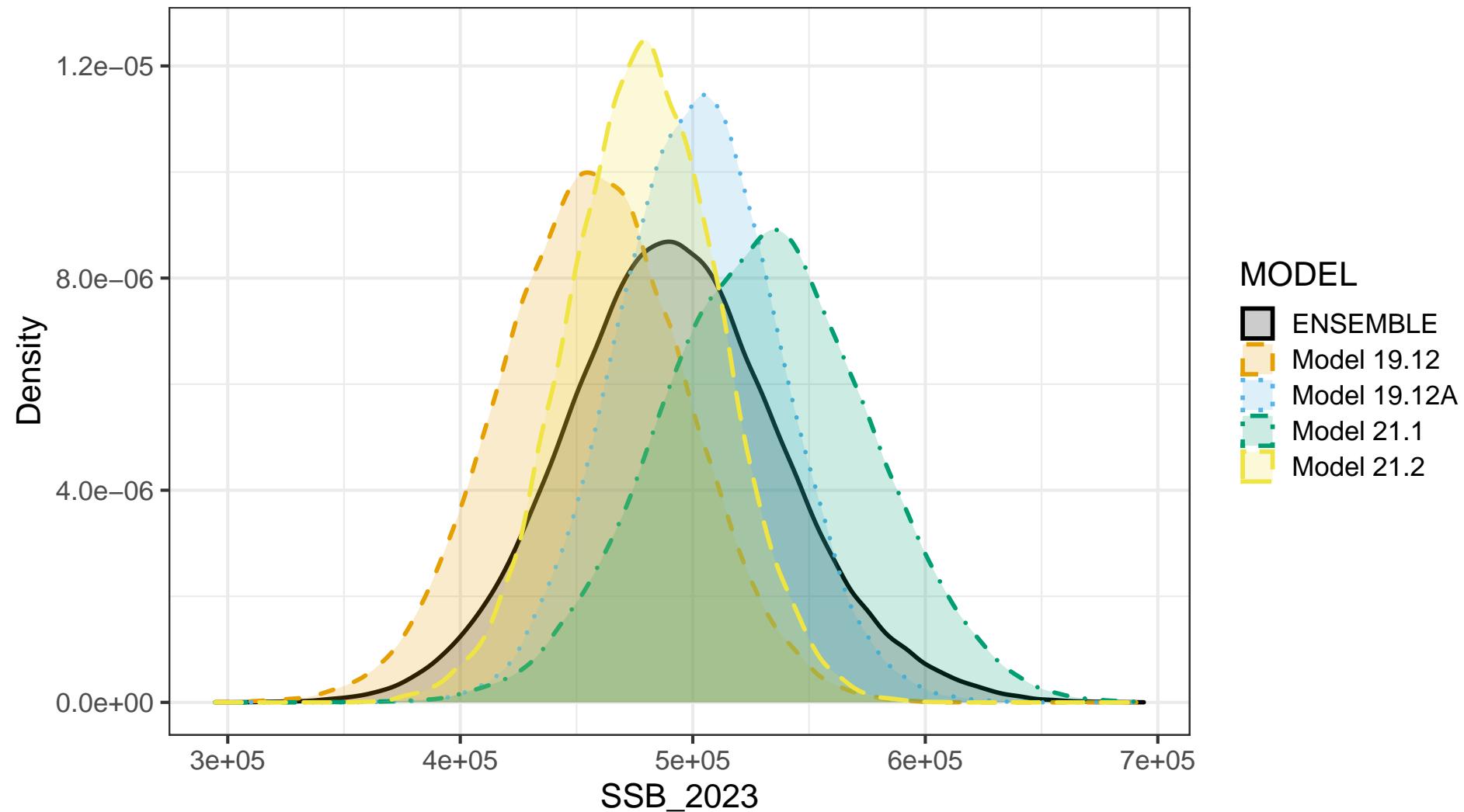
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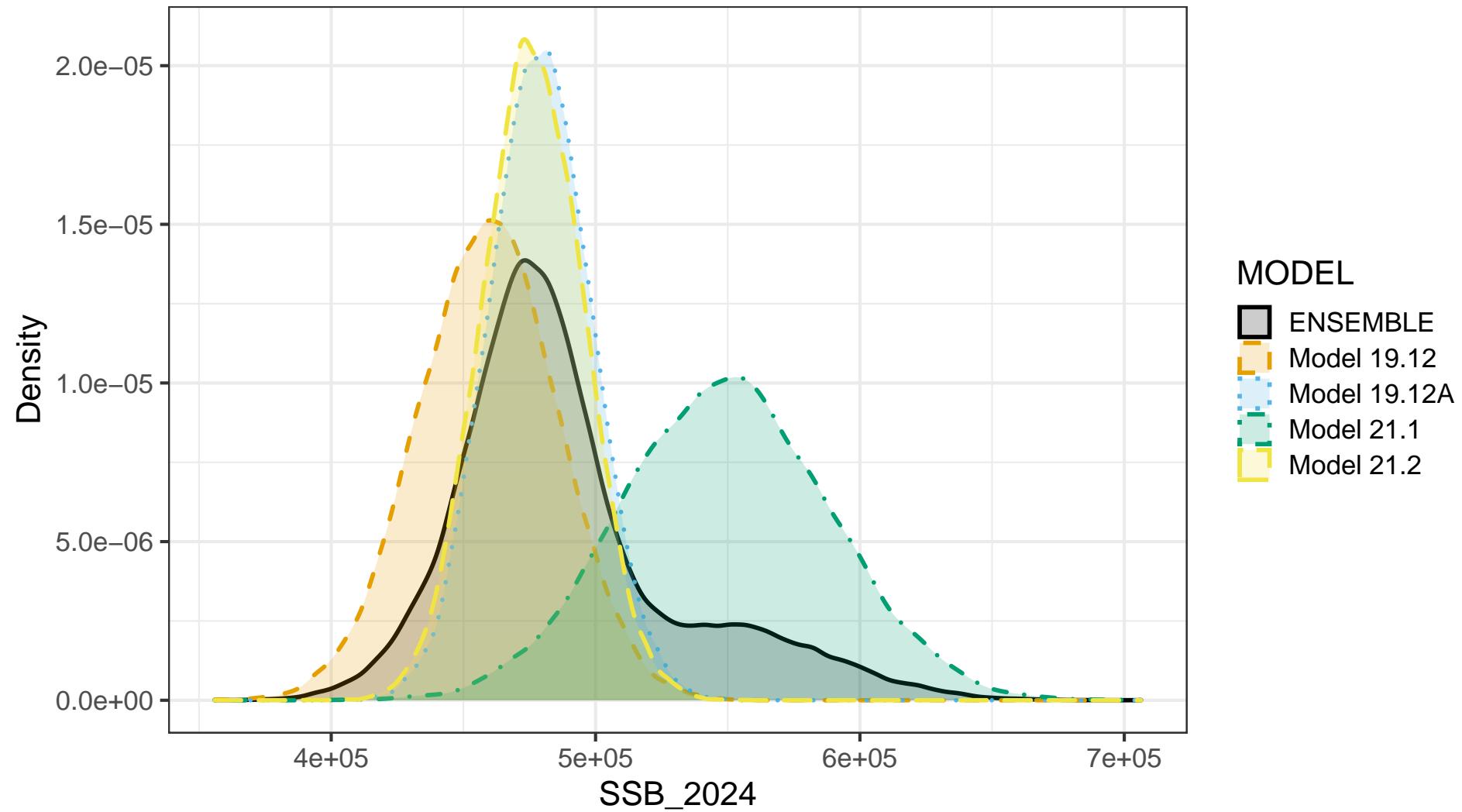
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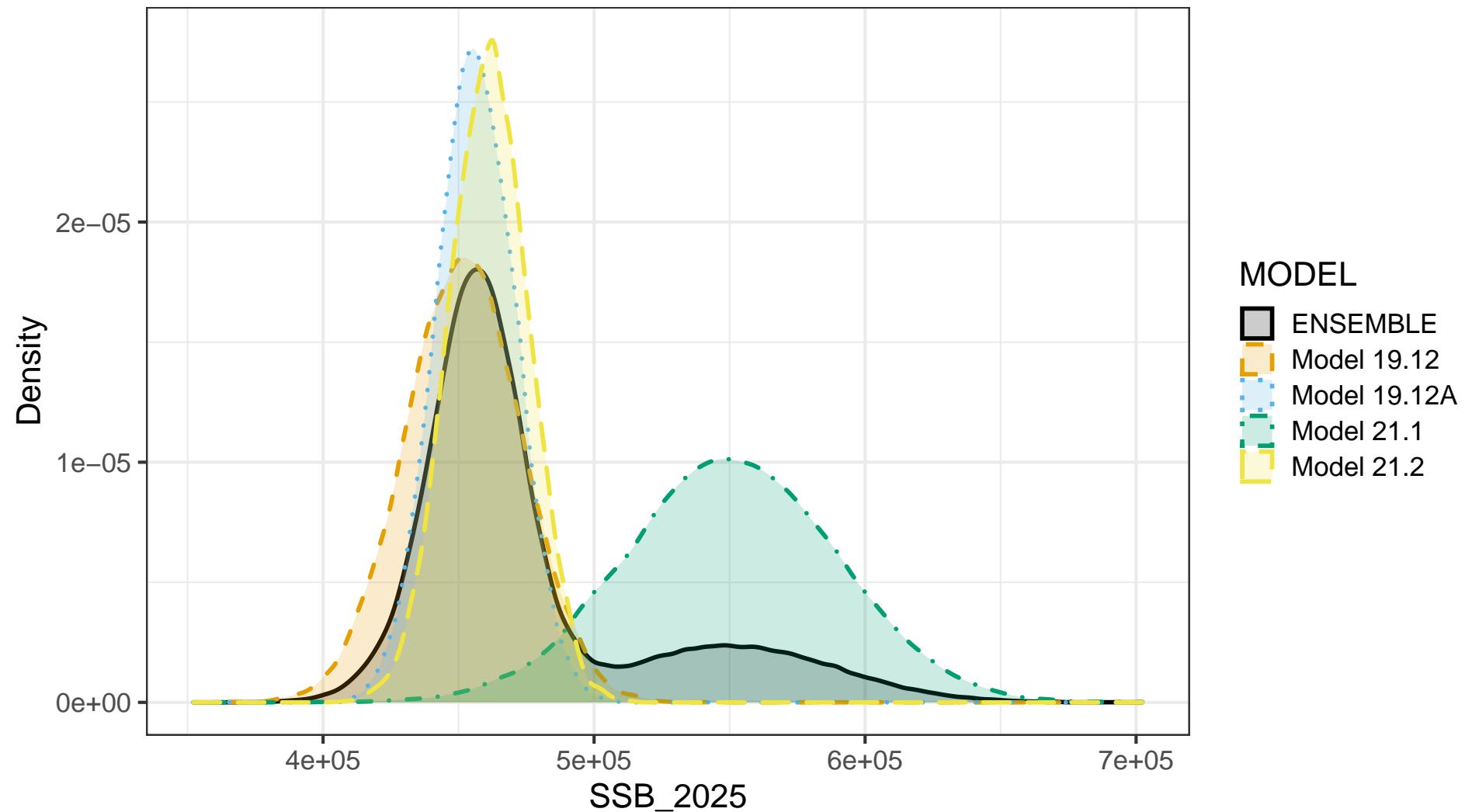
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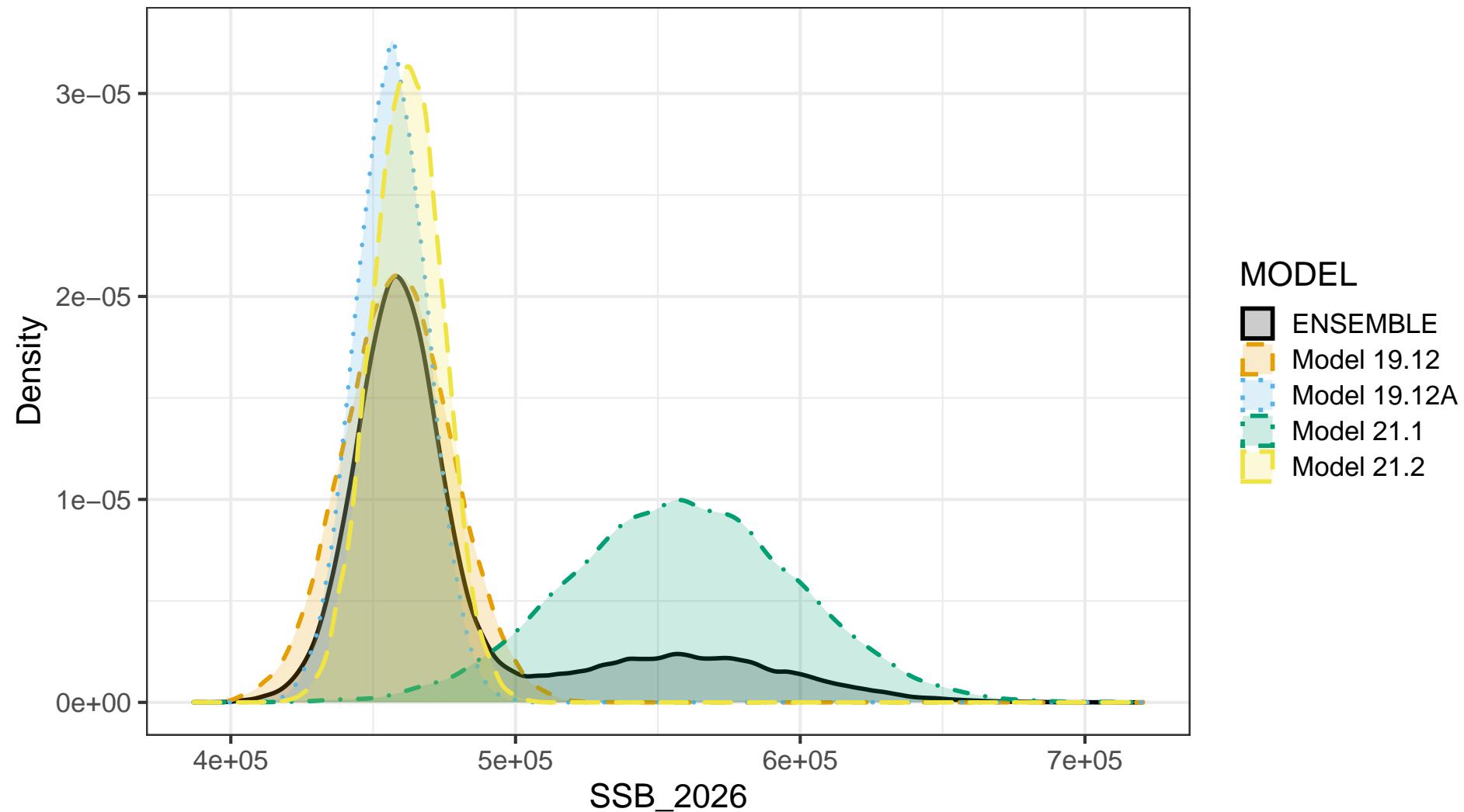
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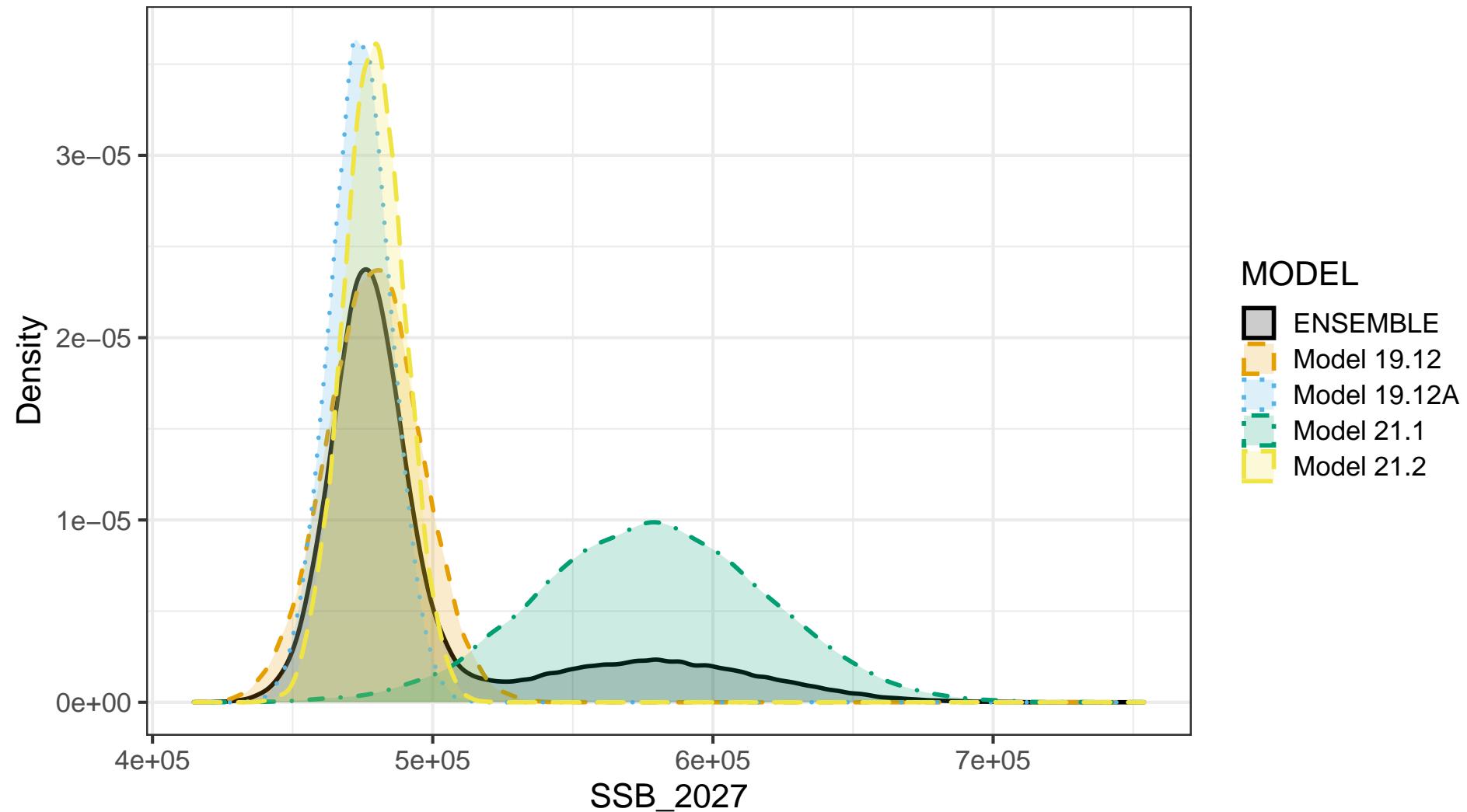
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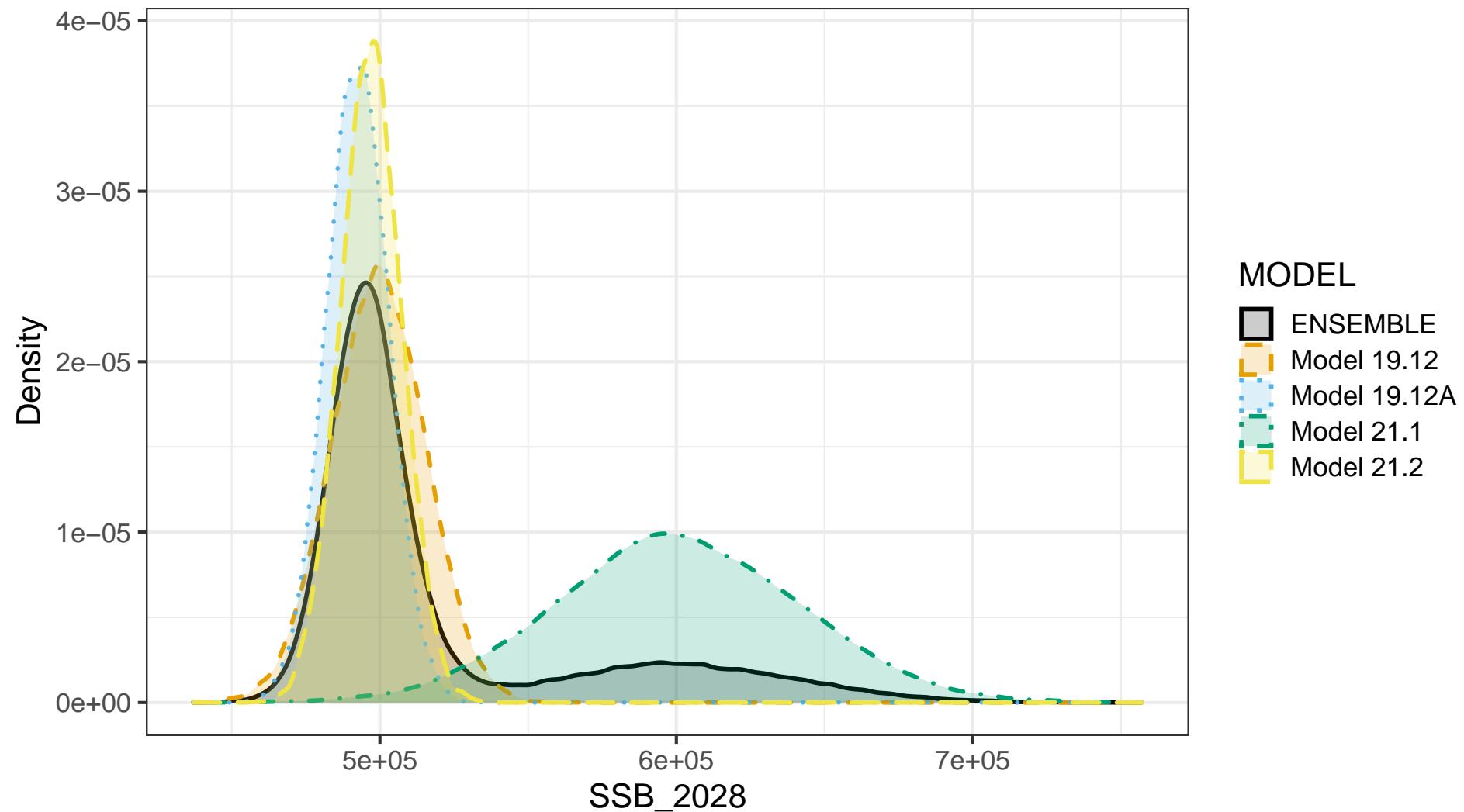
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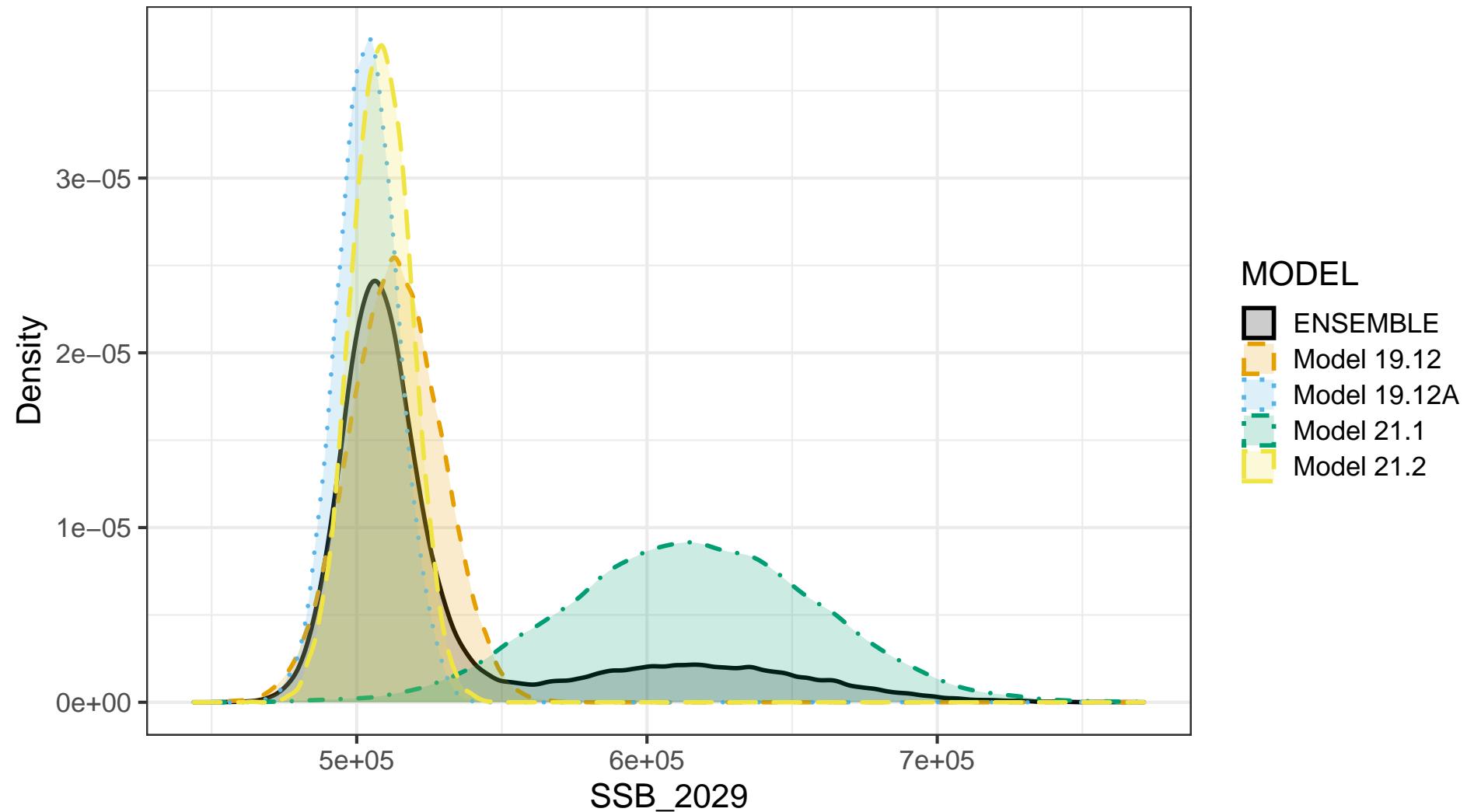
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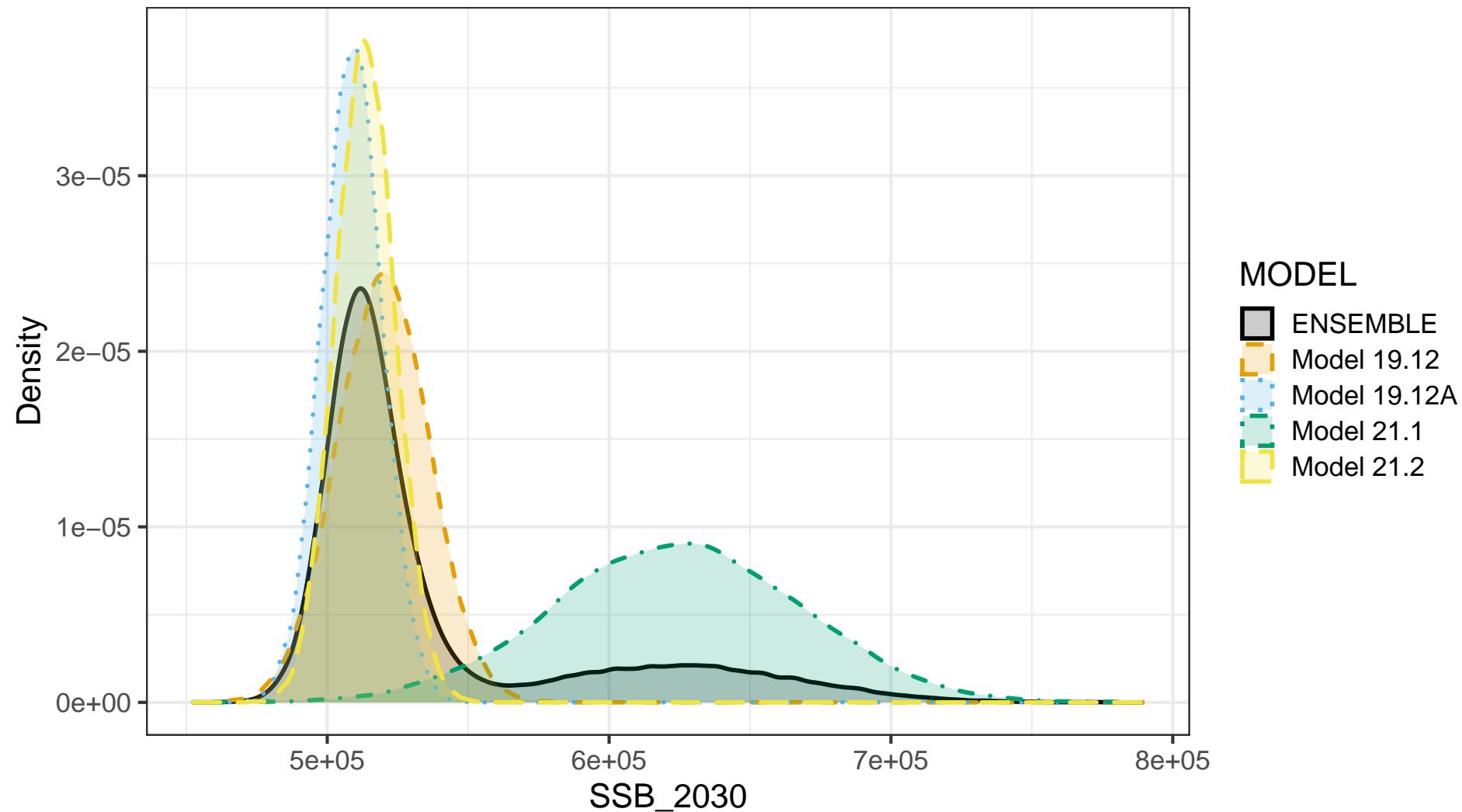
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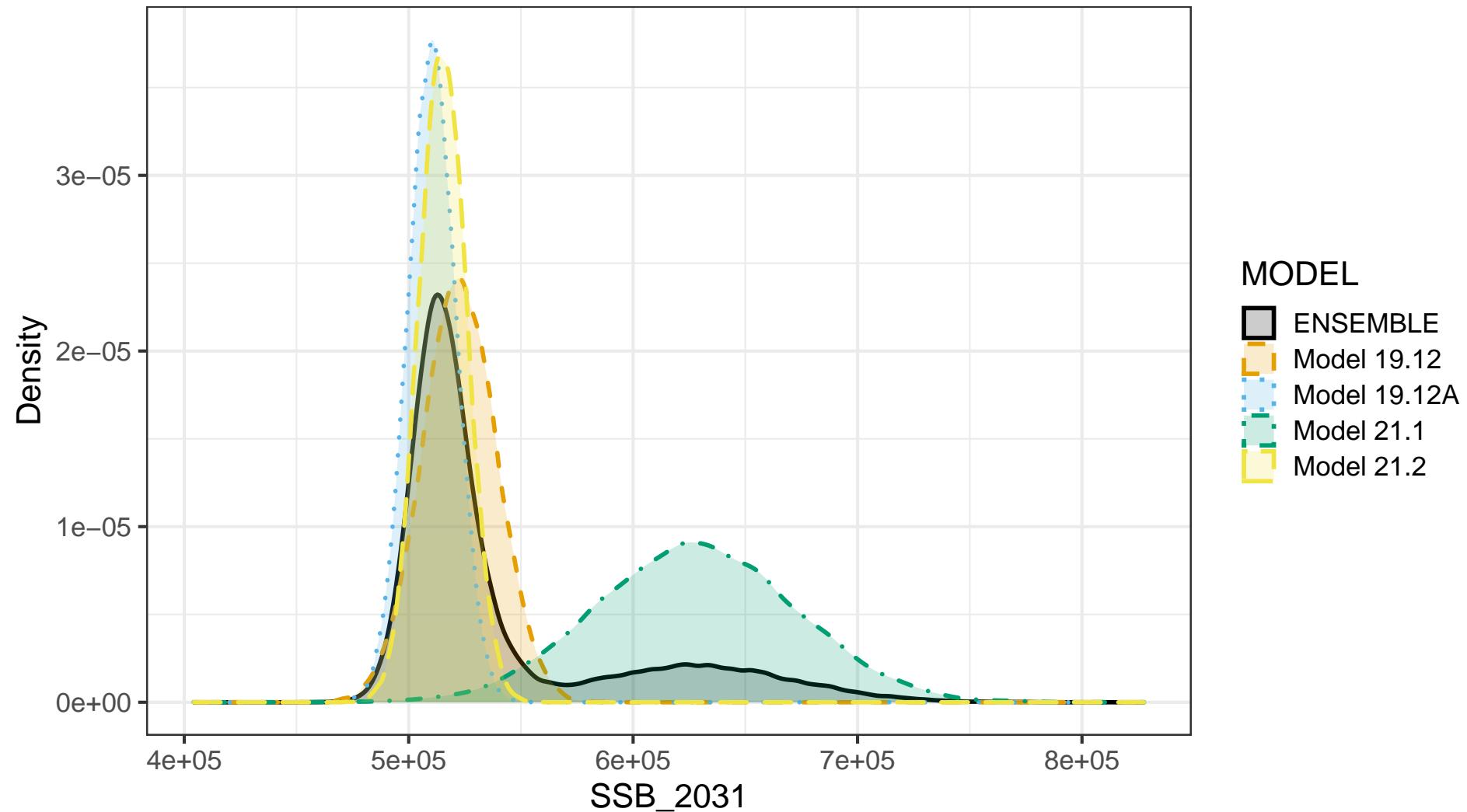
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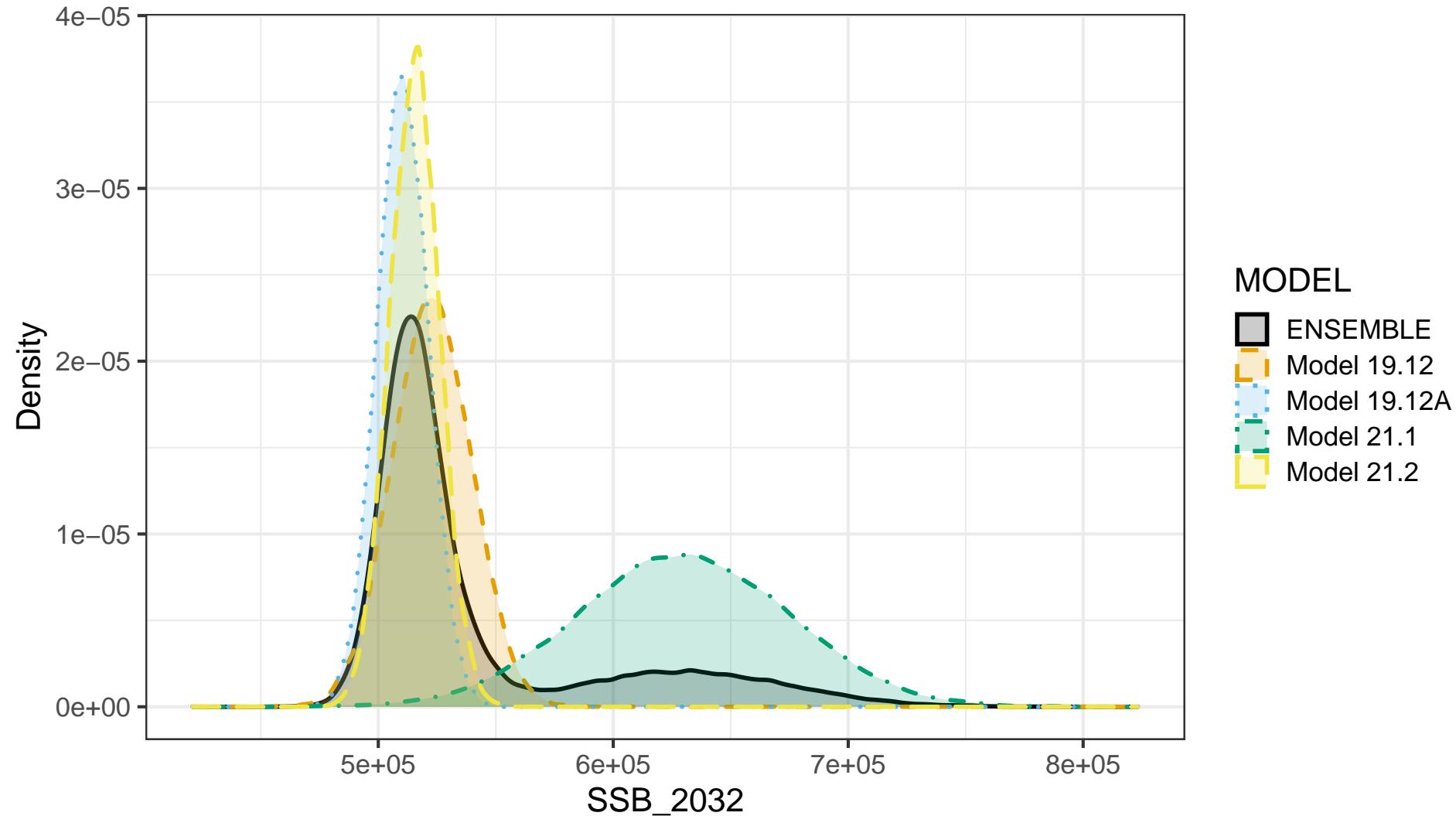
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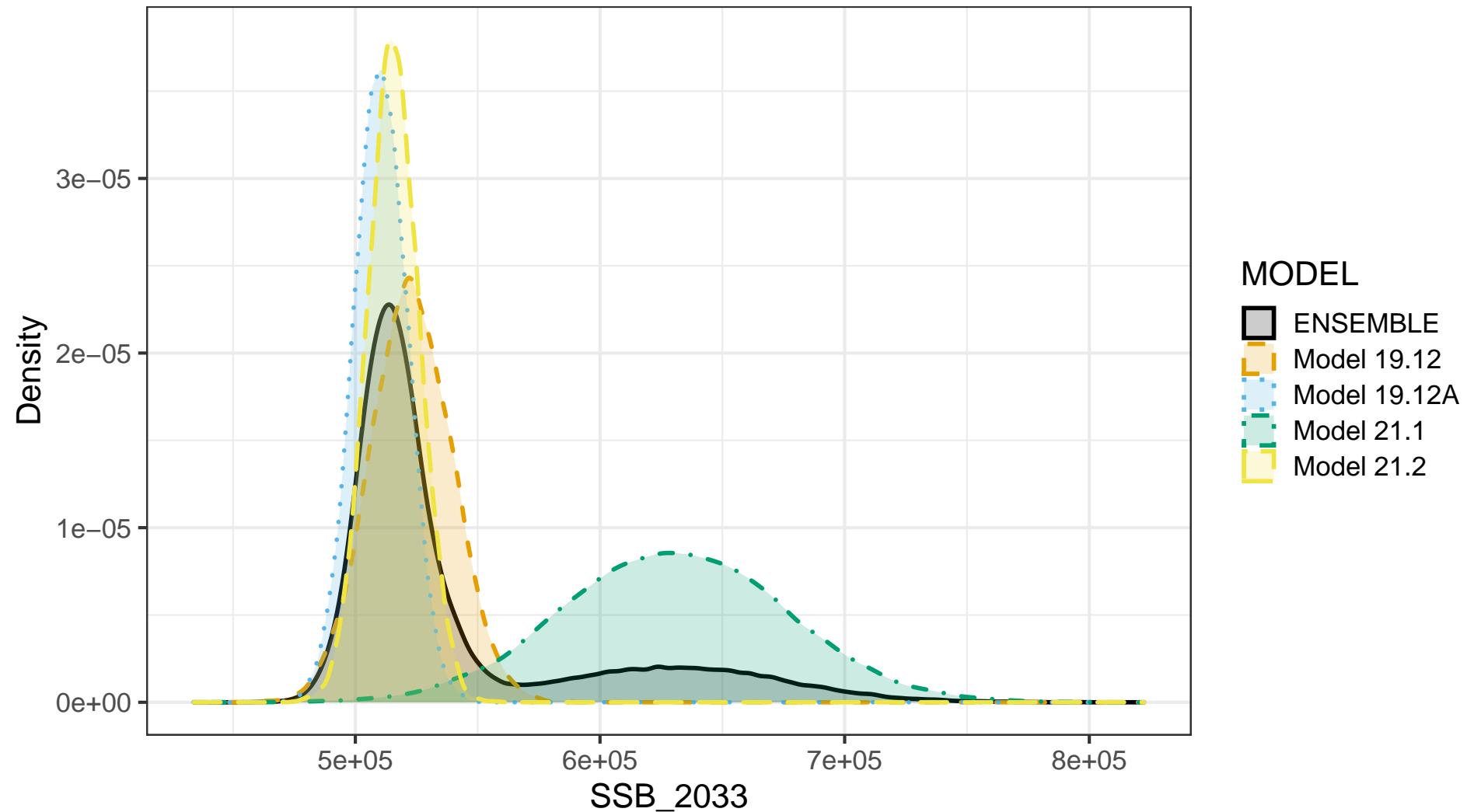
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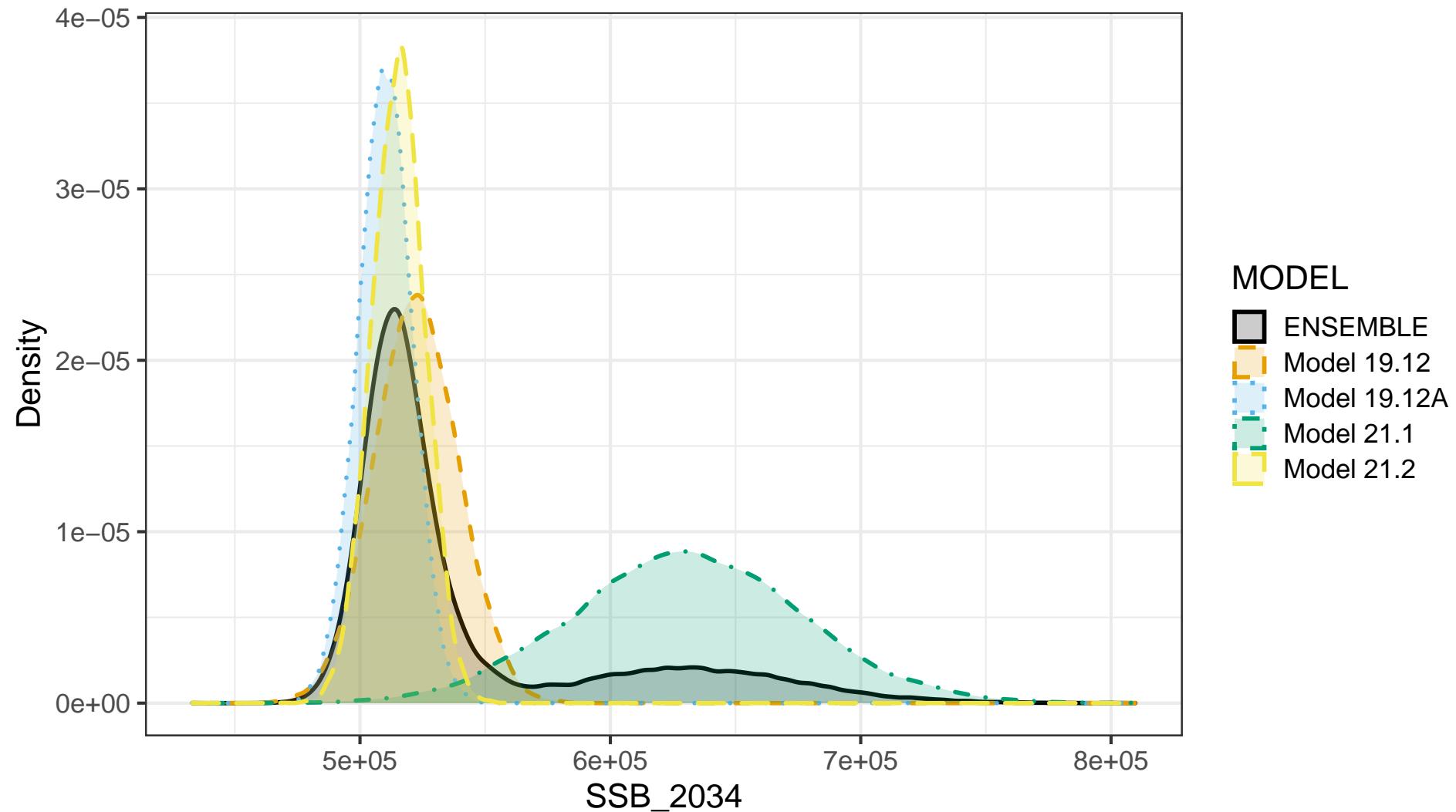
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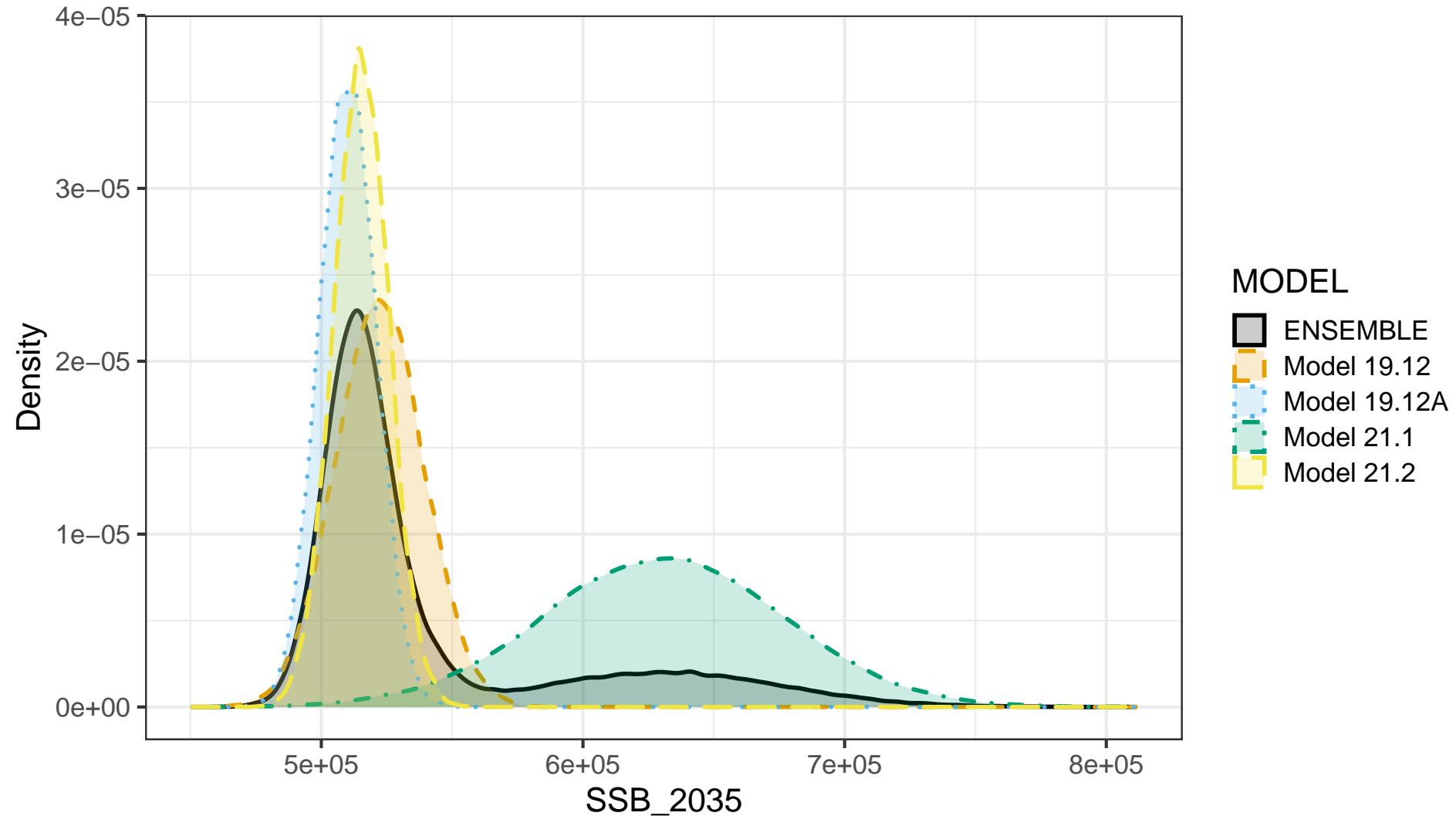
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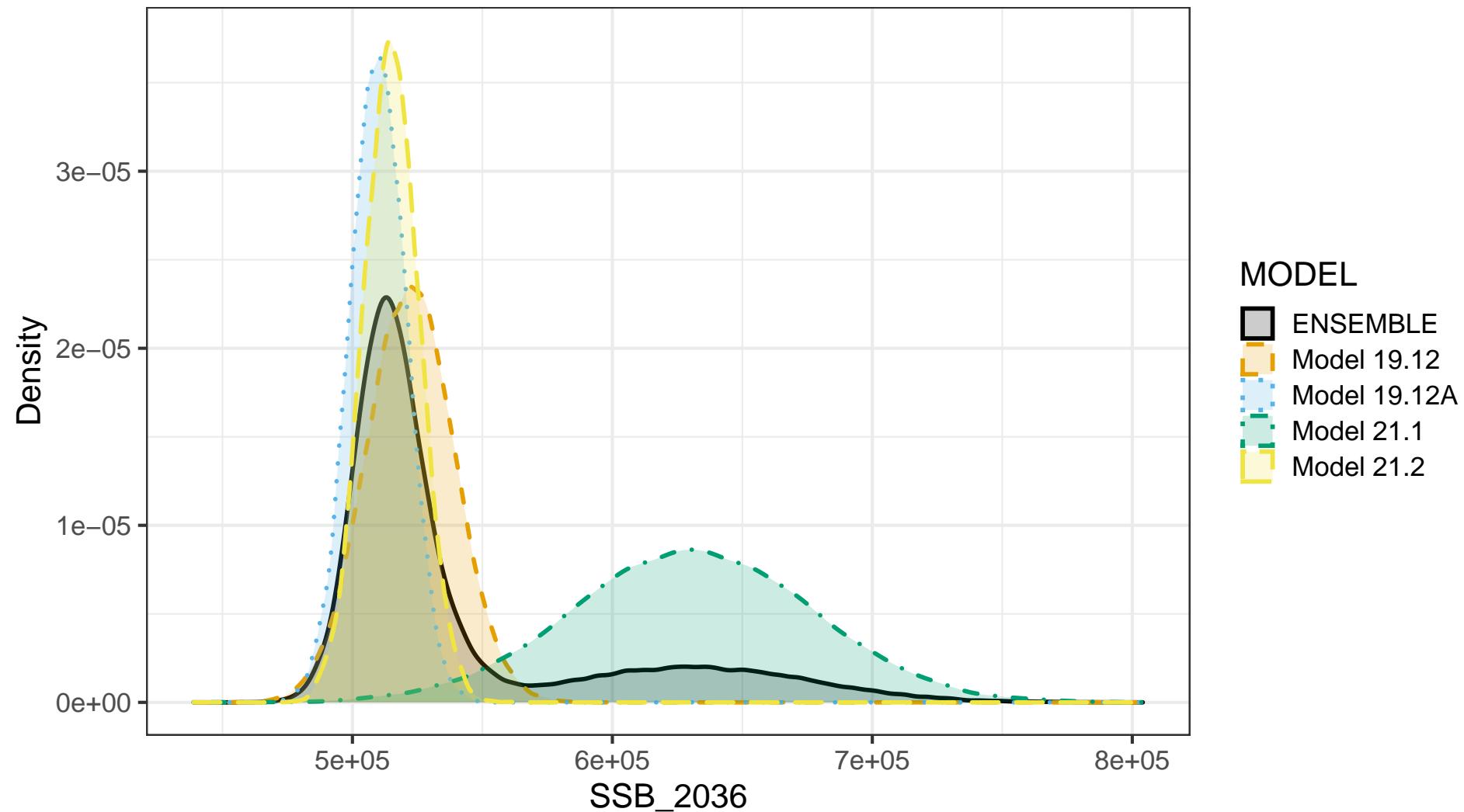
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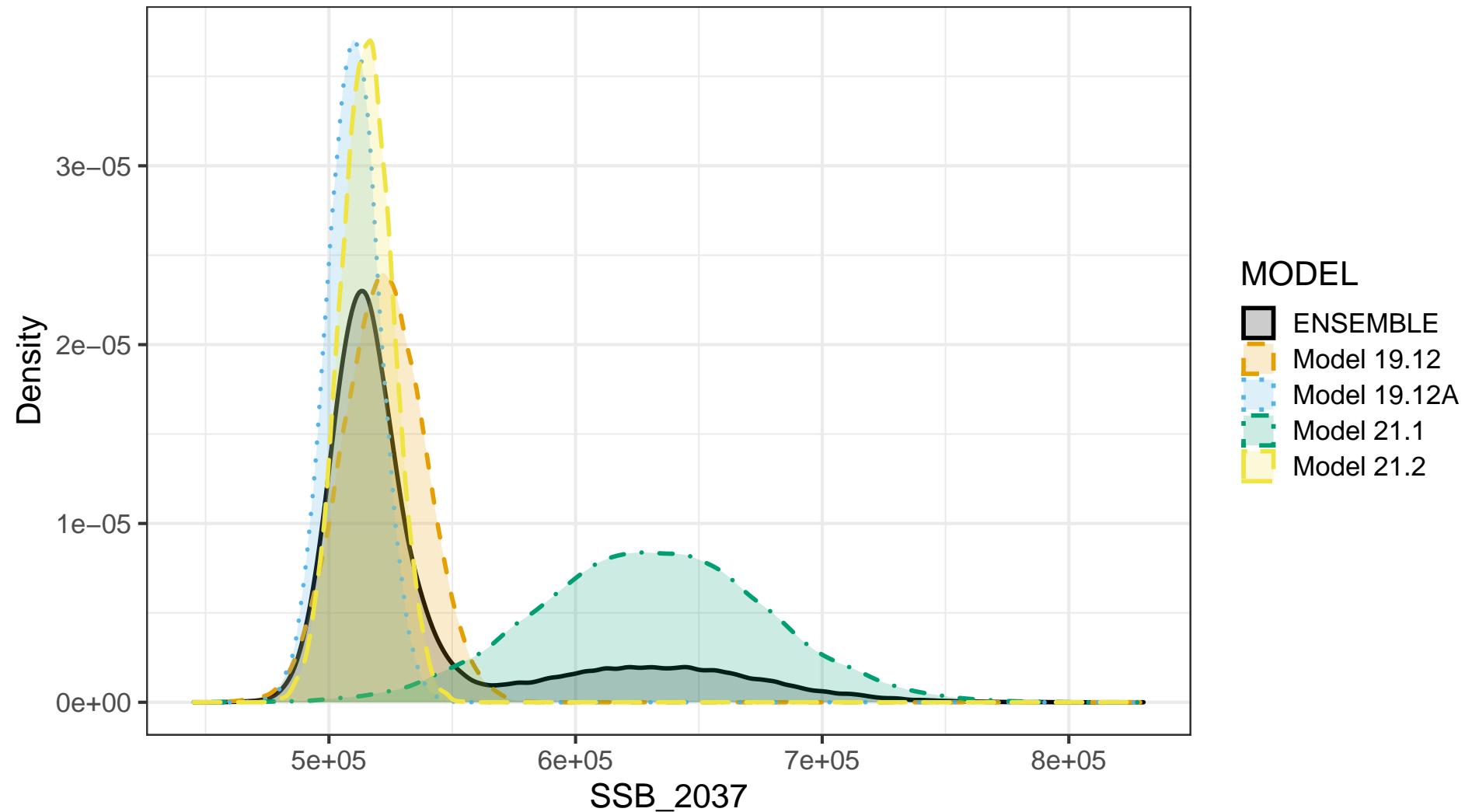
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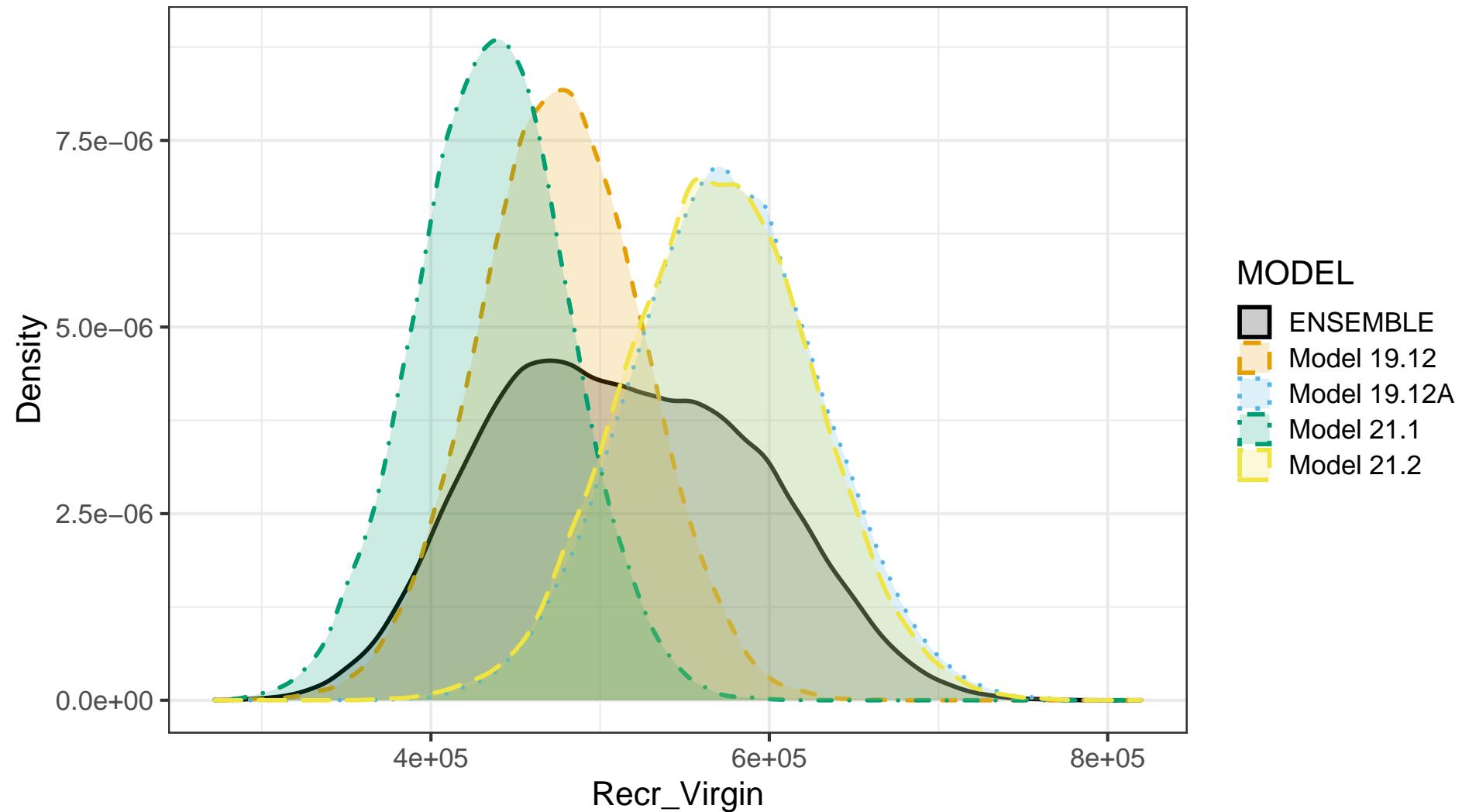
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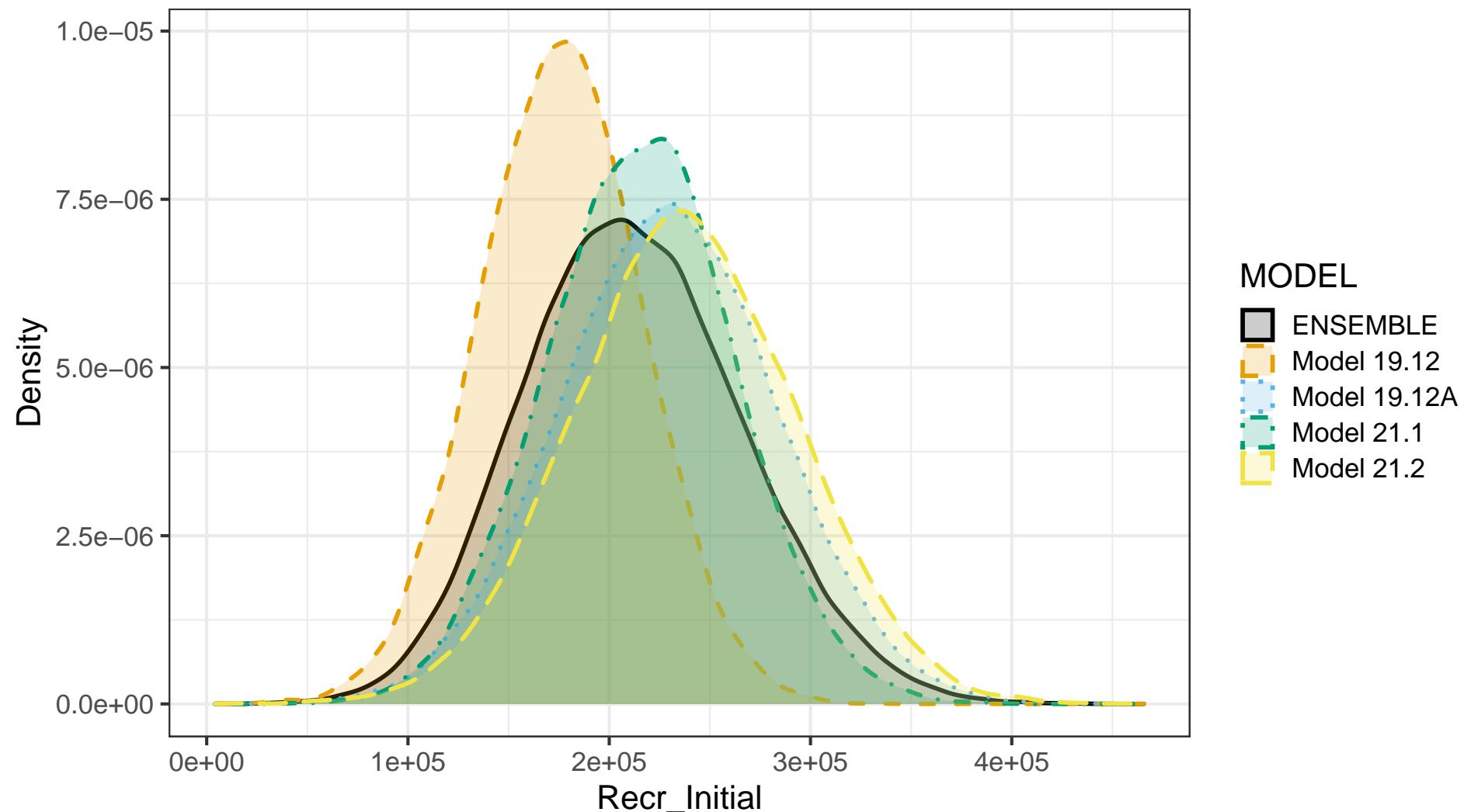
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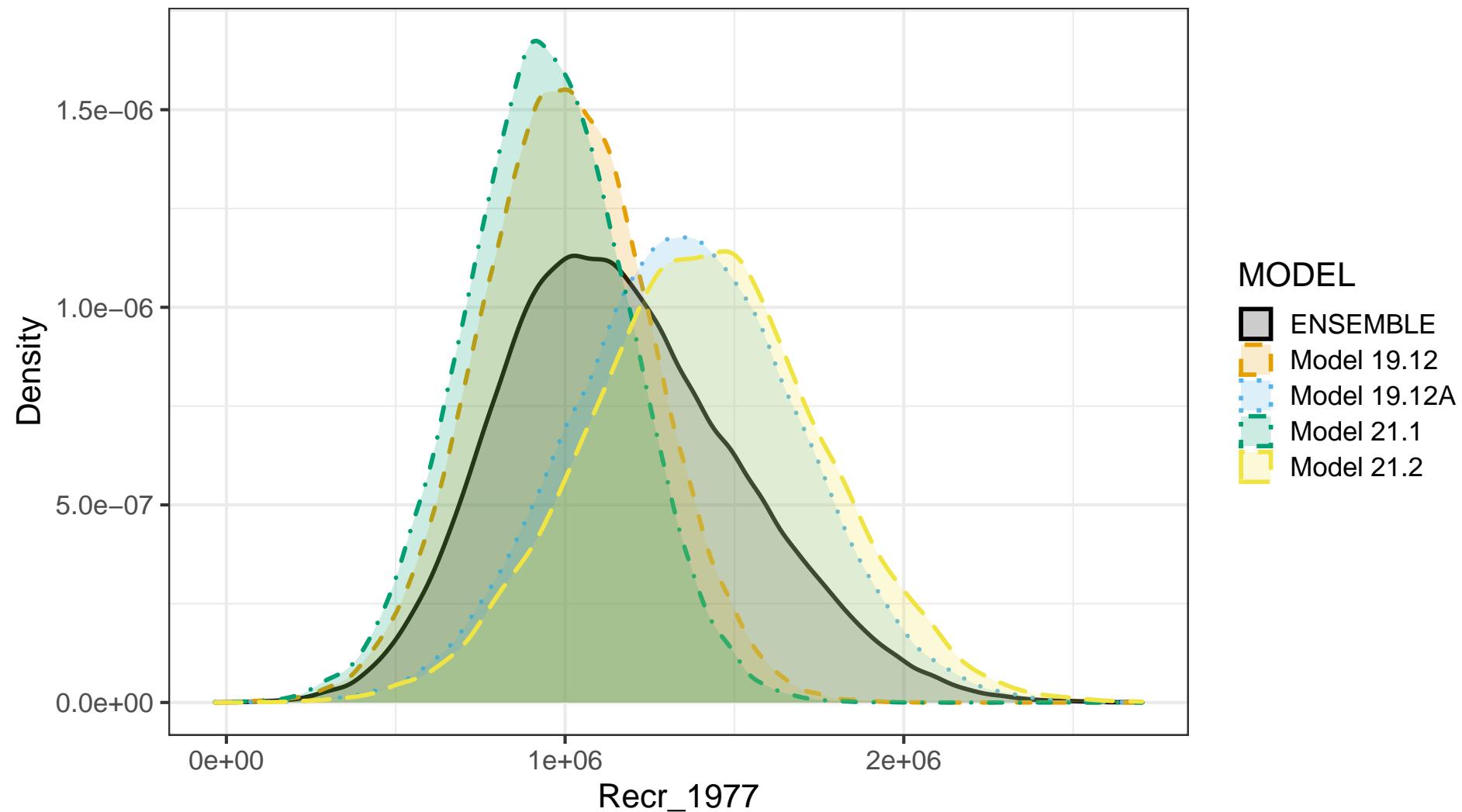
Recr_Virgin



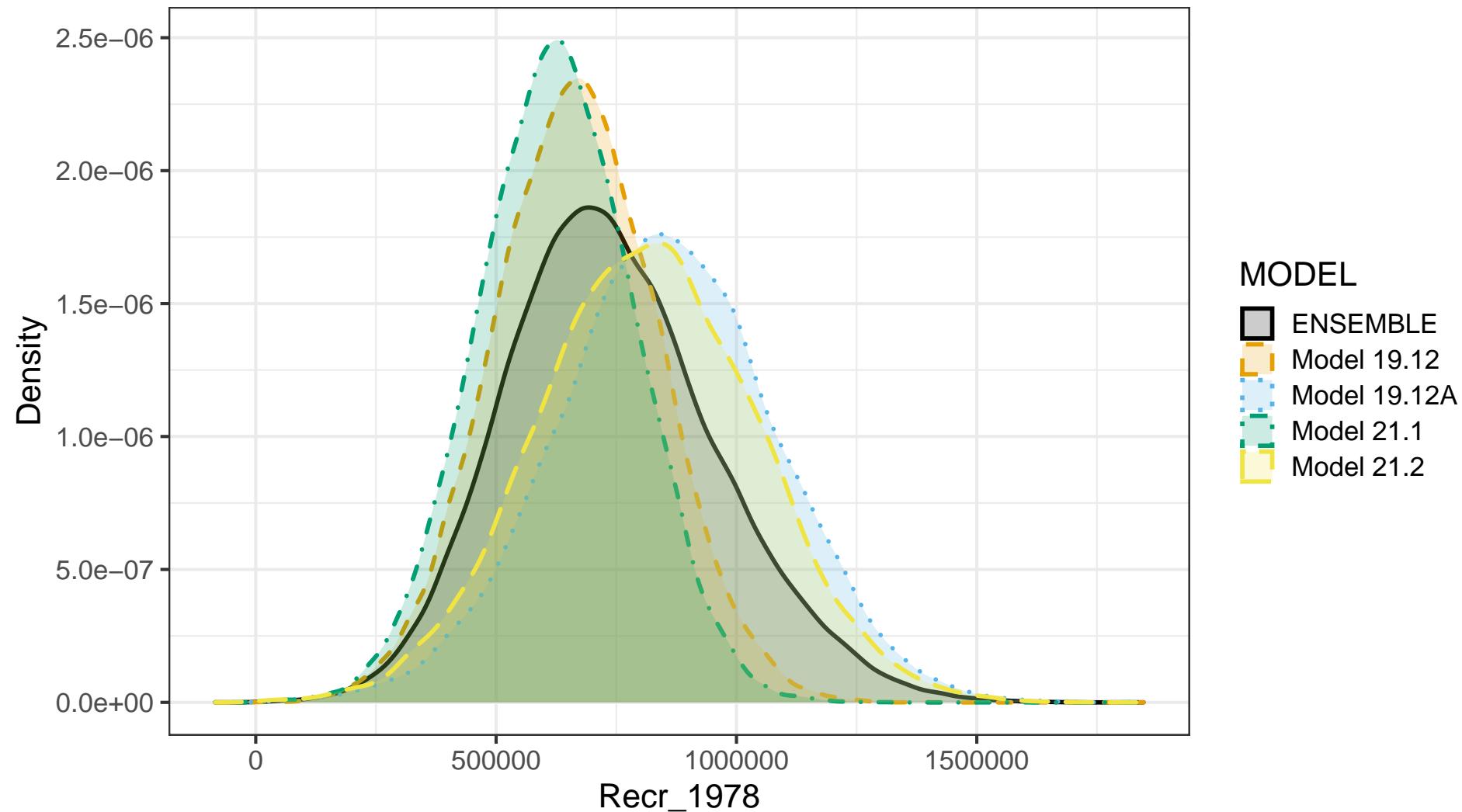
Recr_Initial



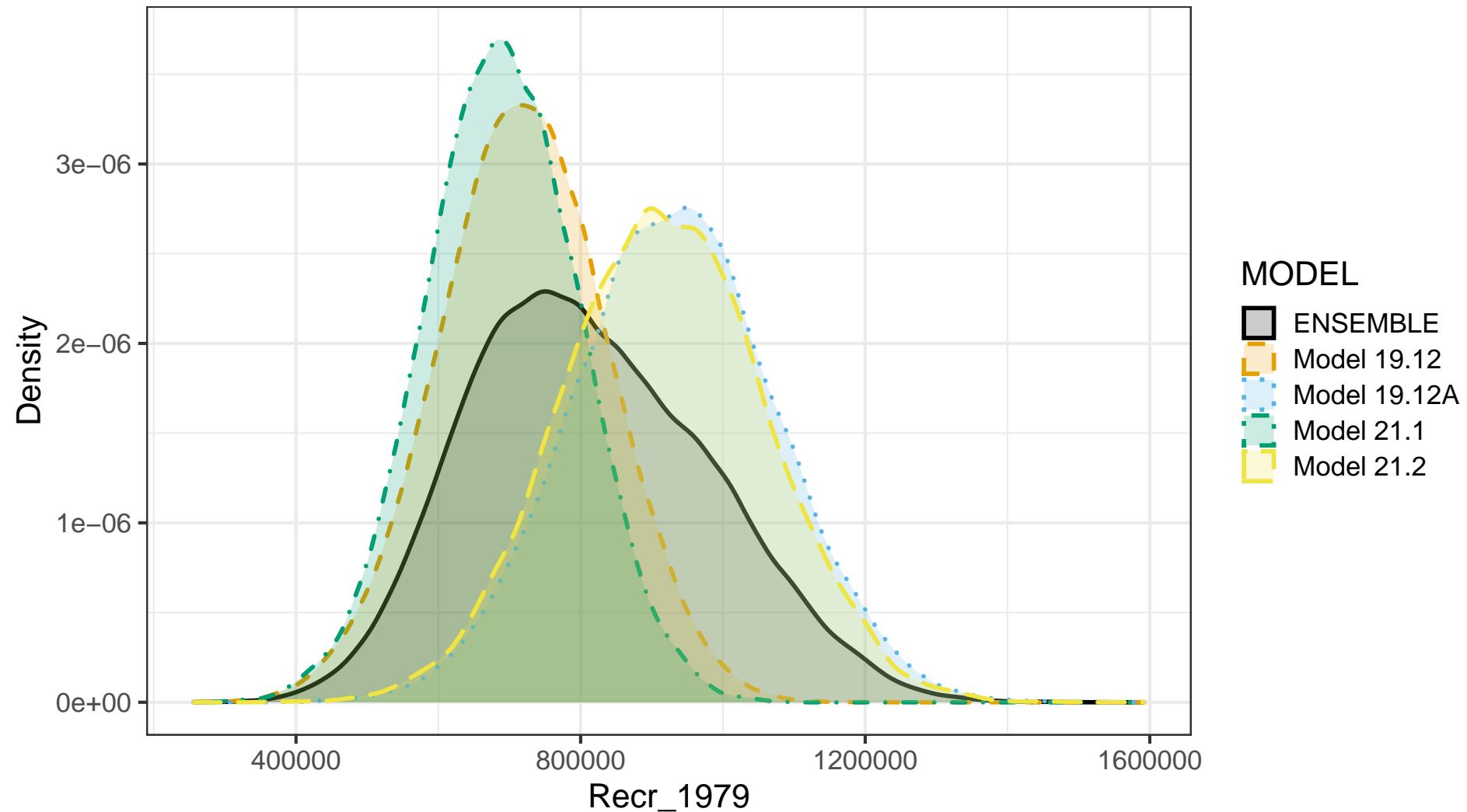
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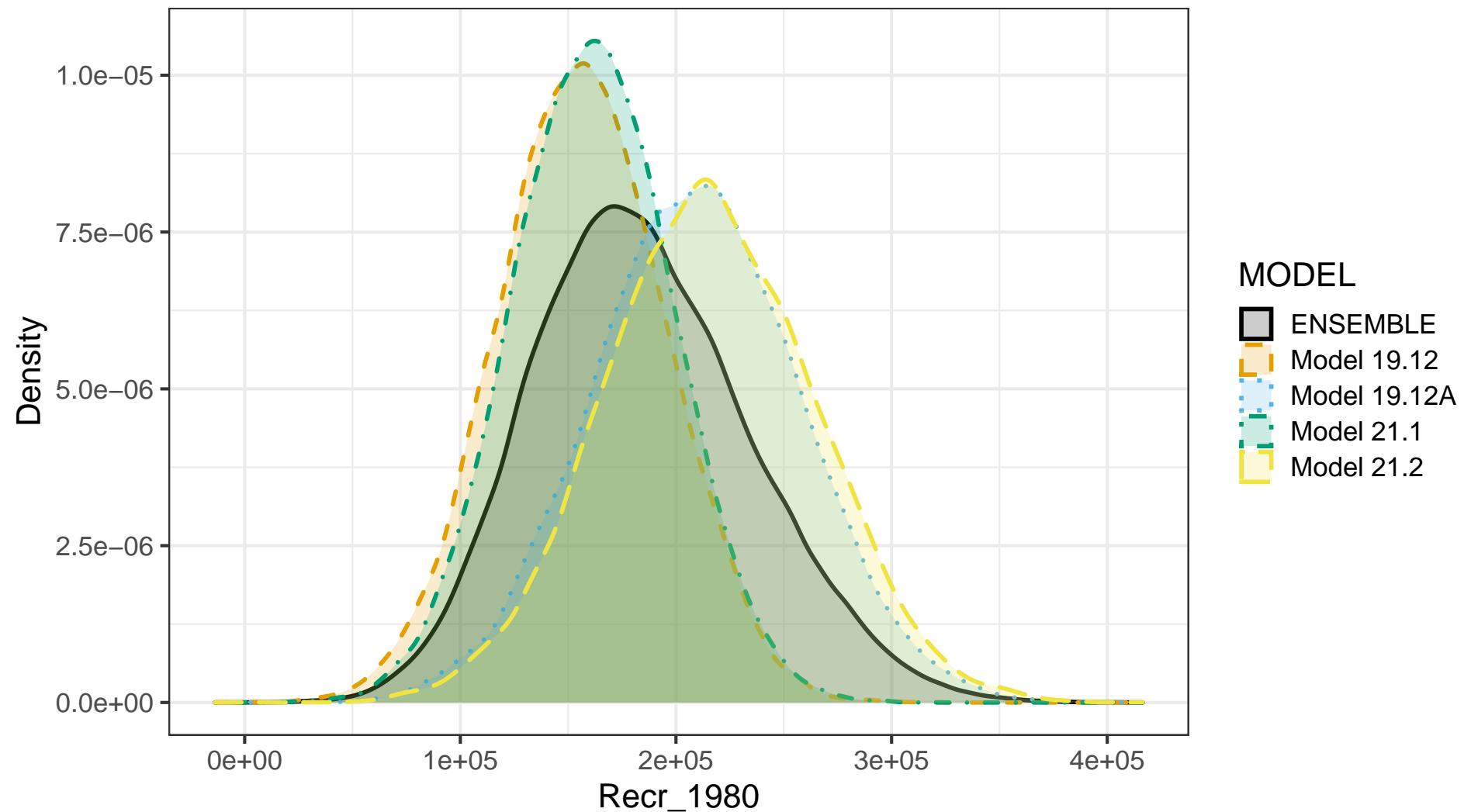
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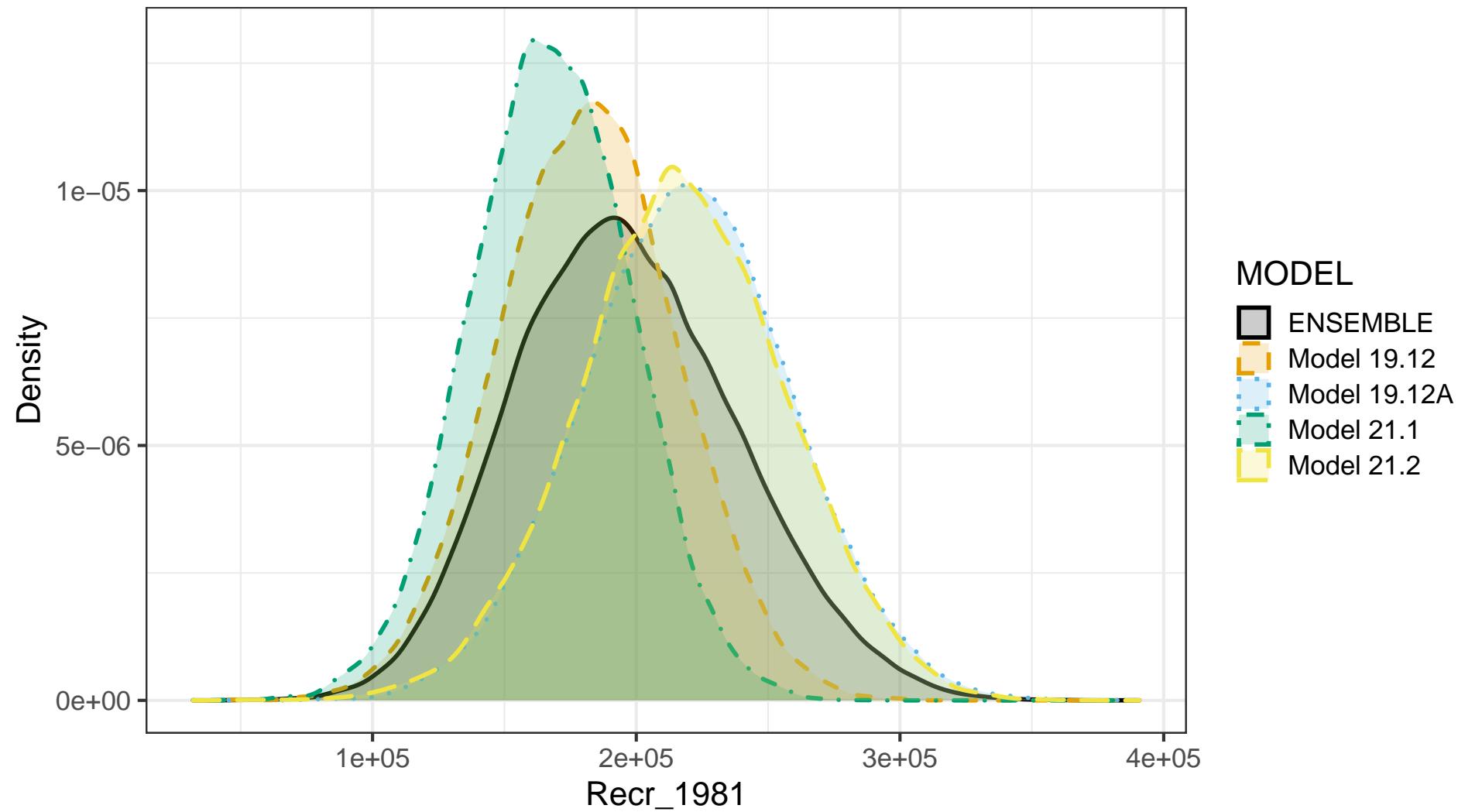
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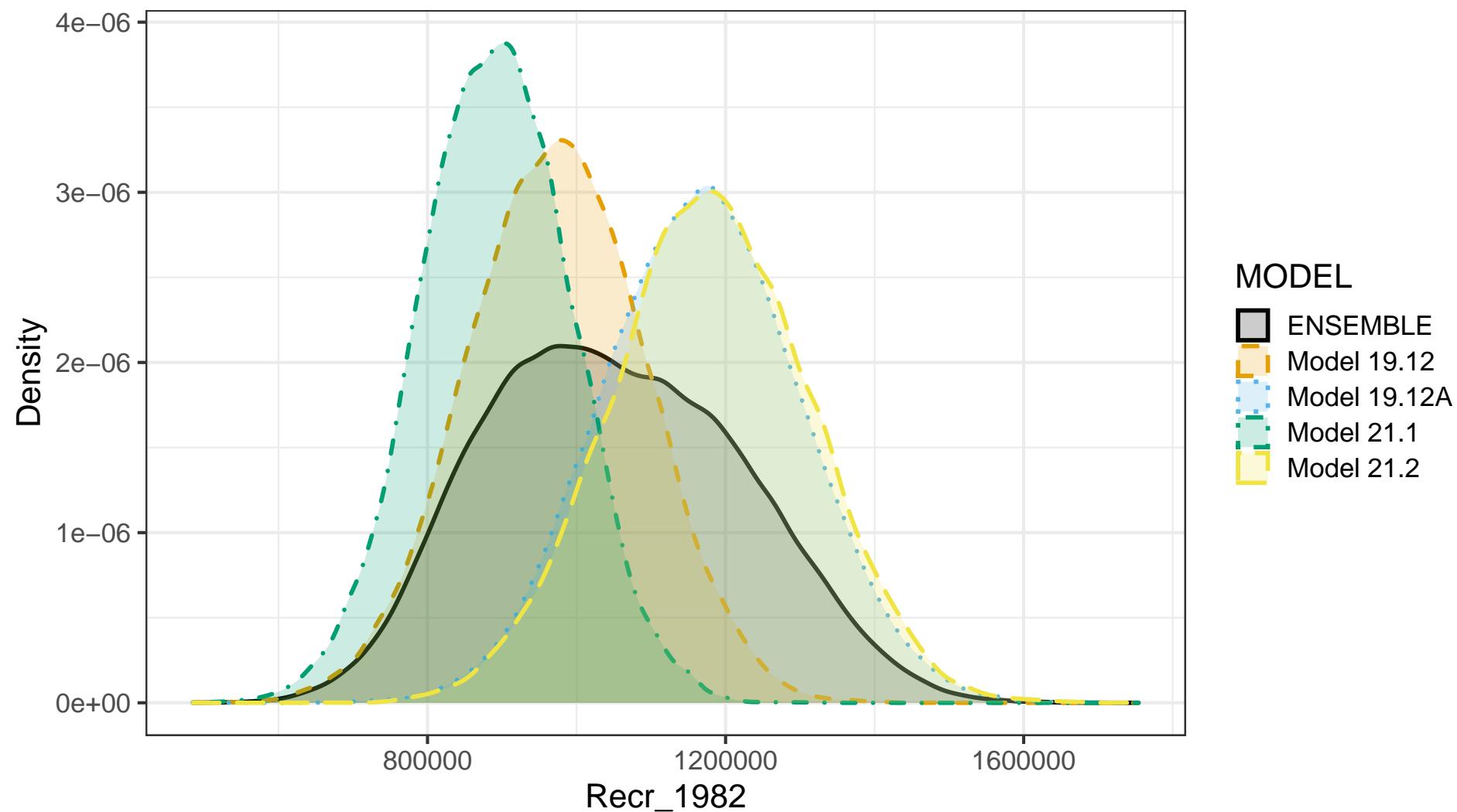
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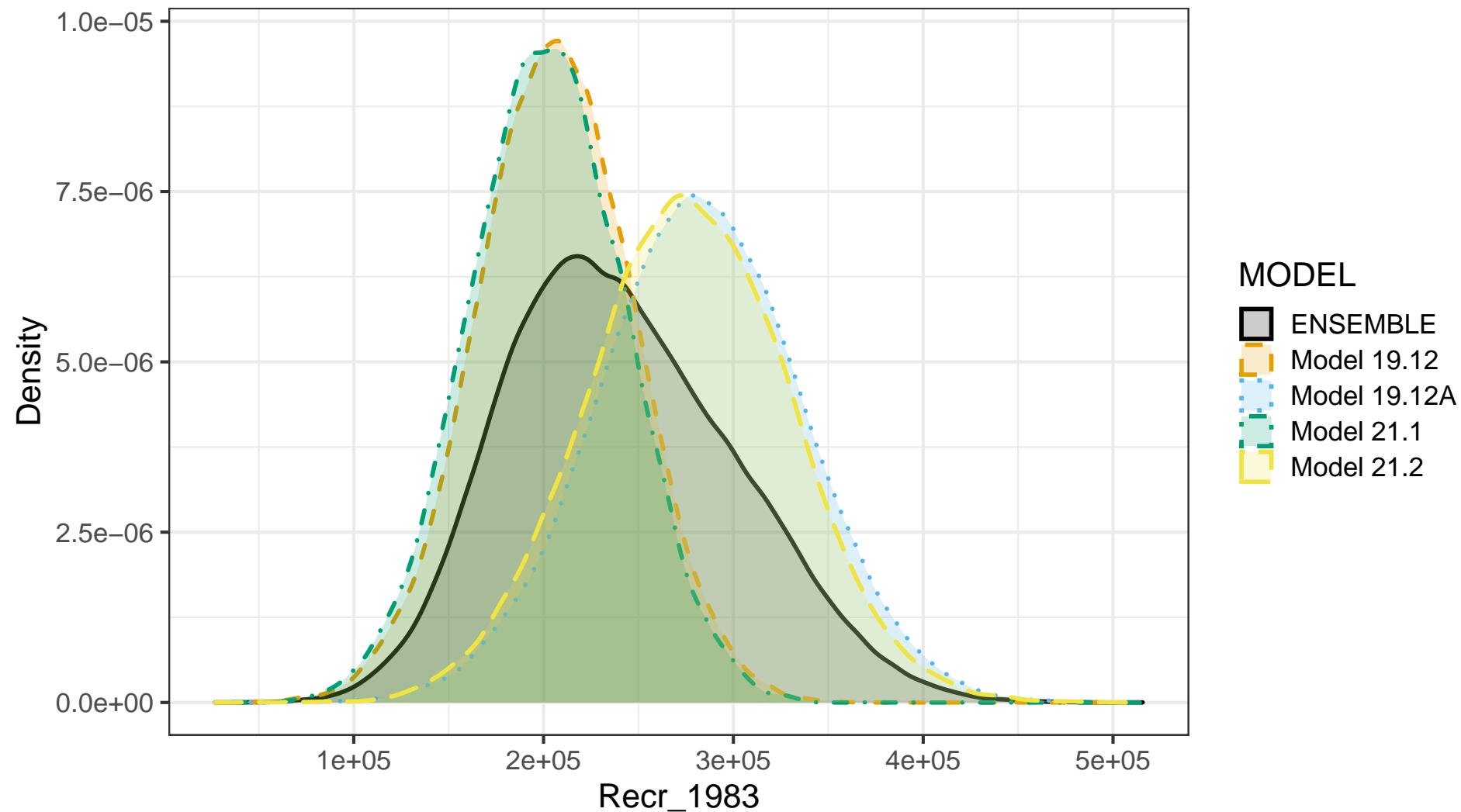
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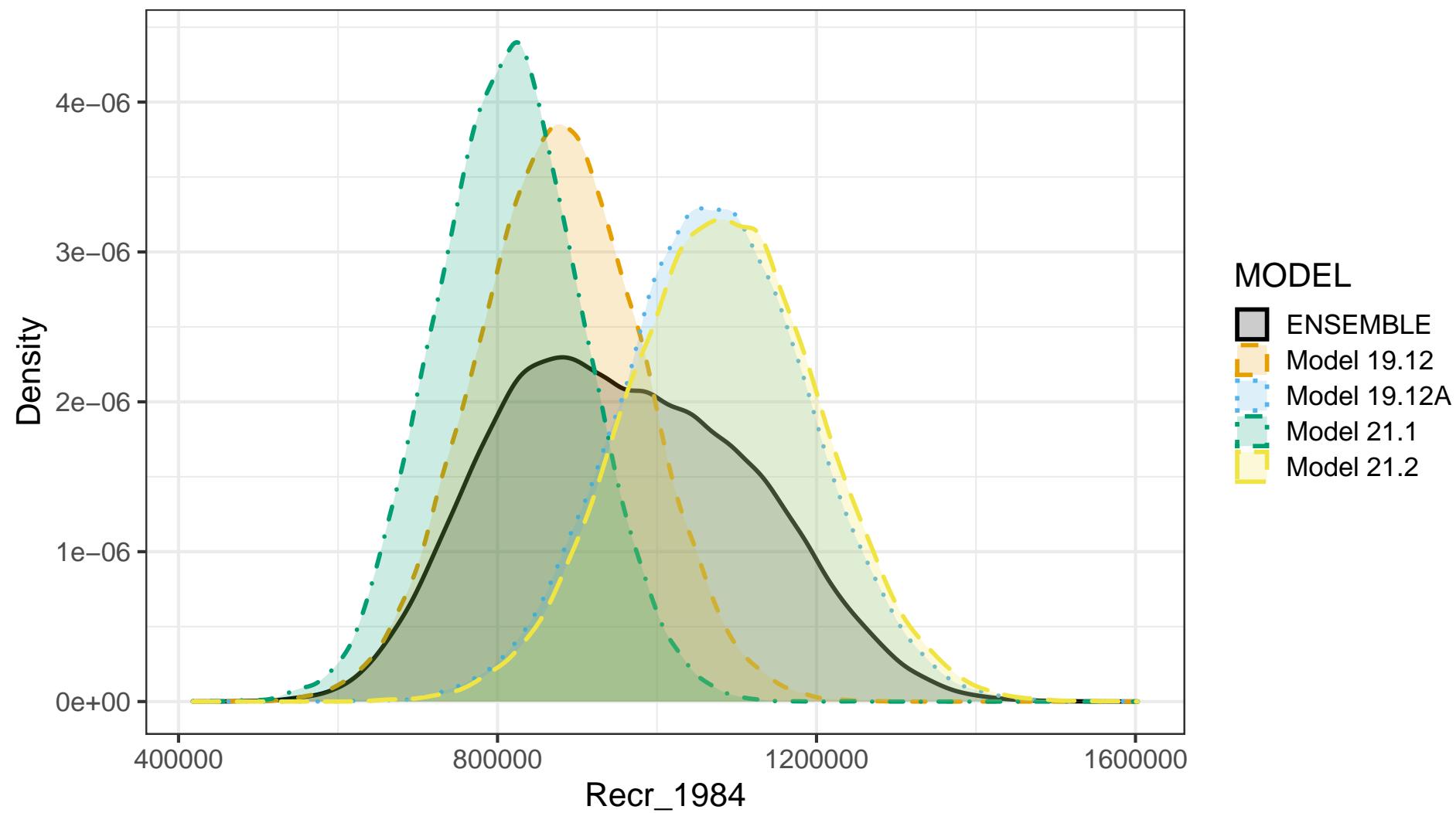
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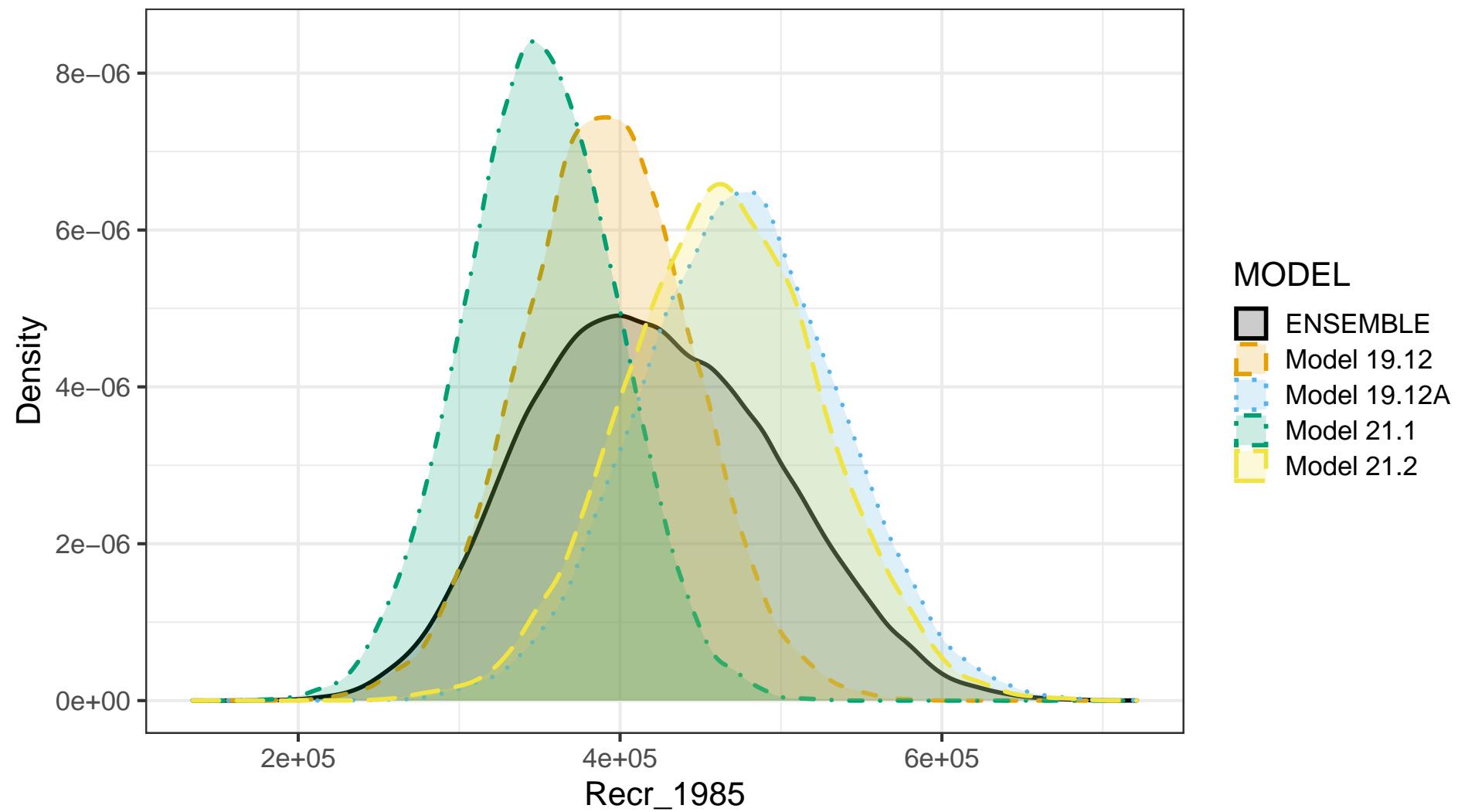
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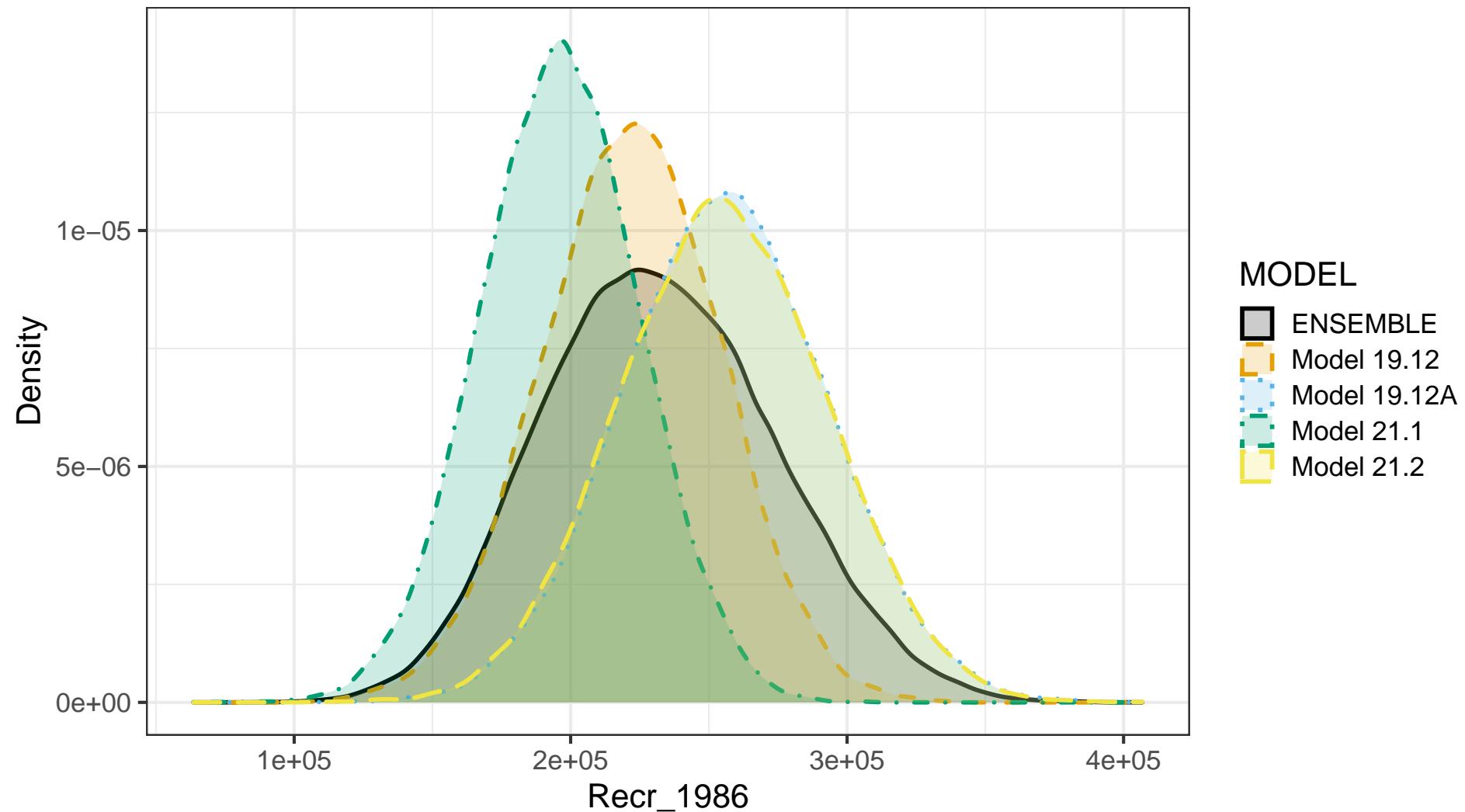
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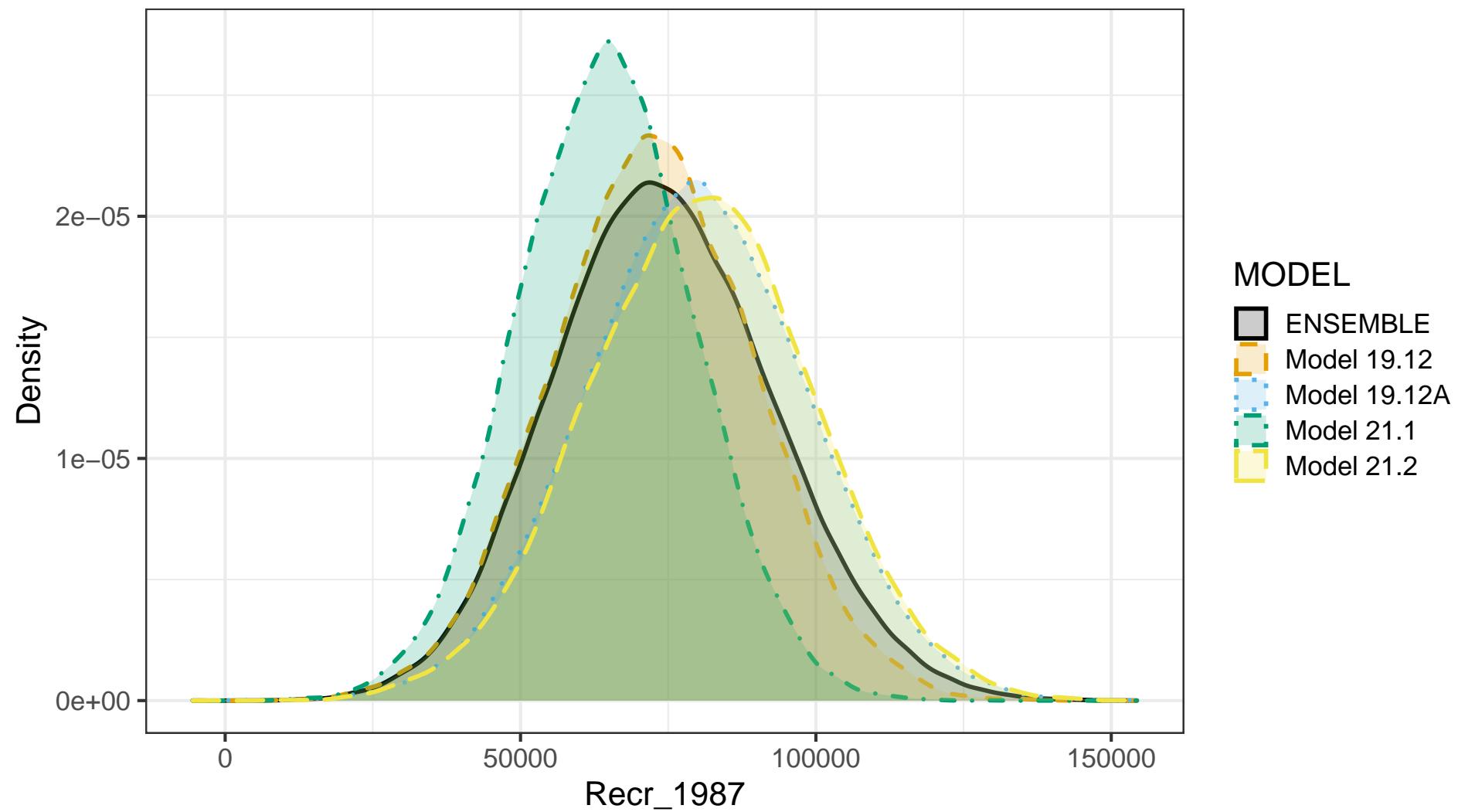
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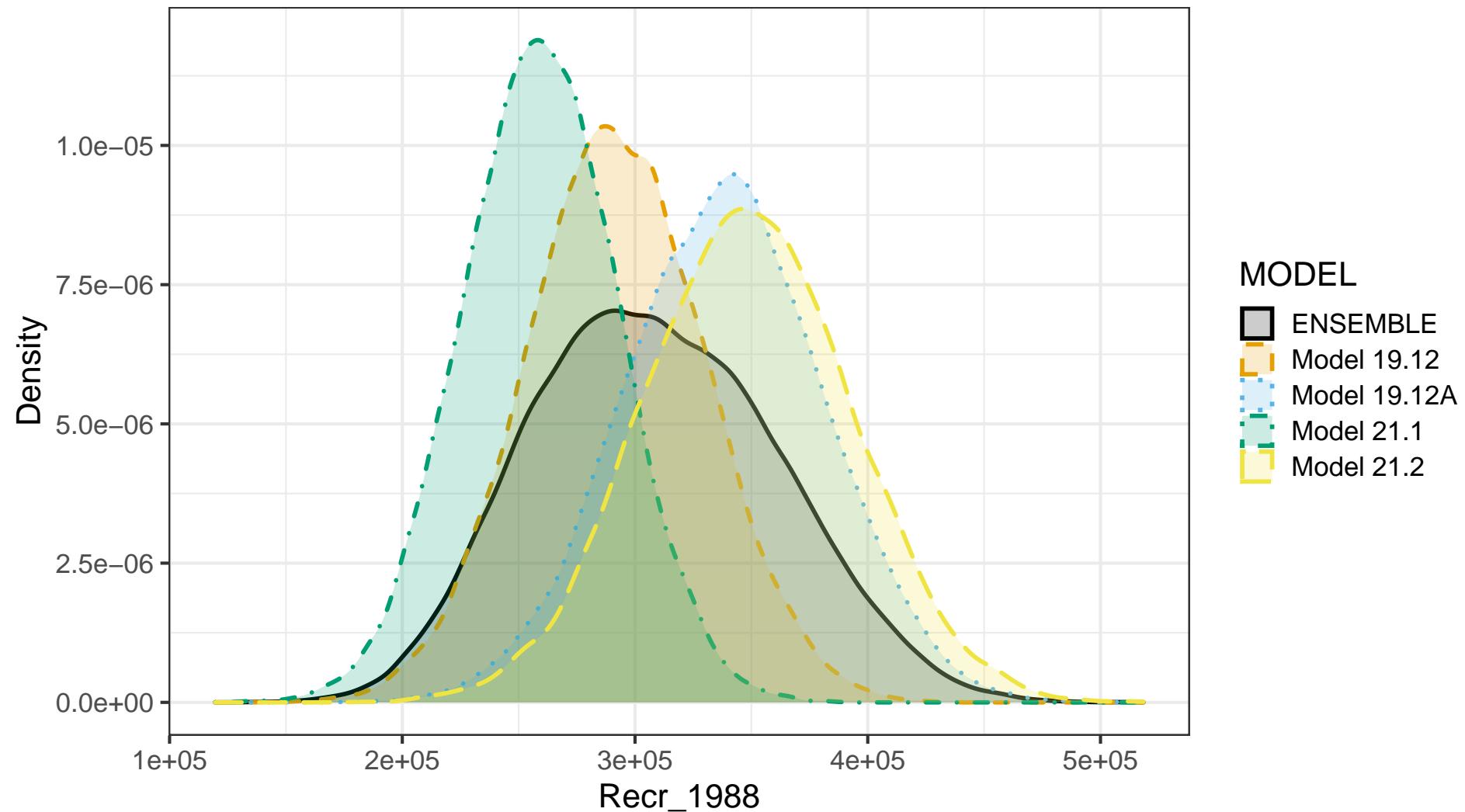
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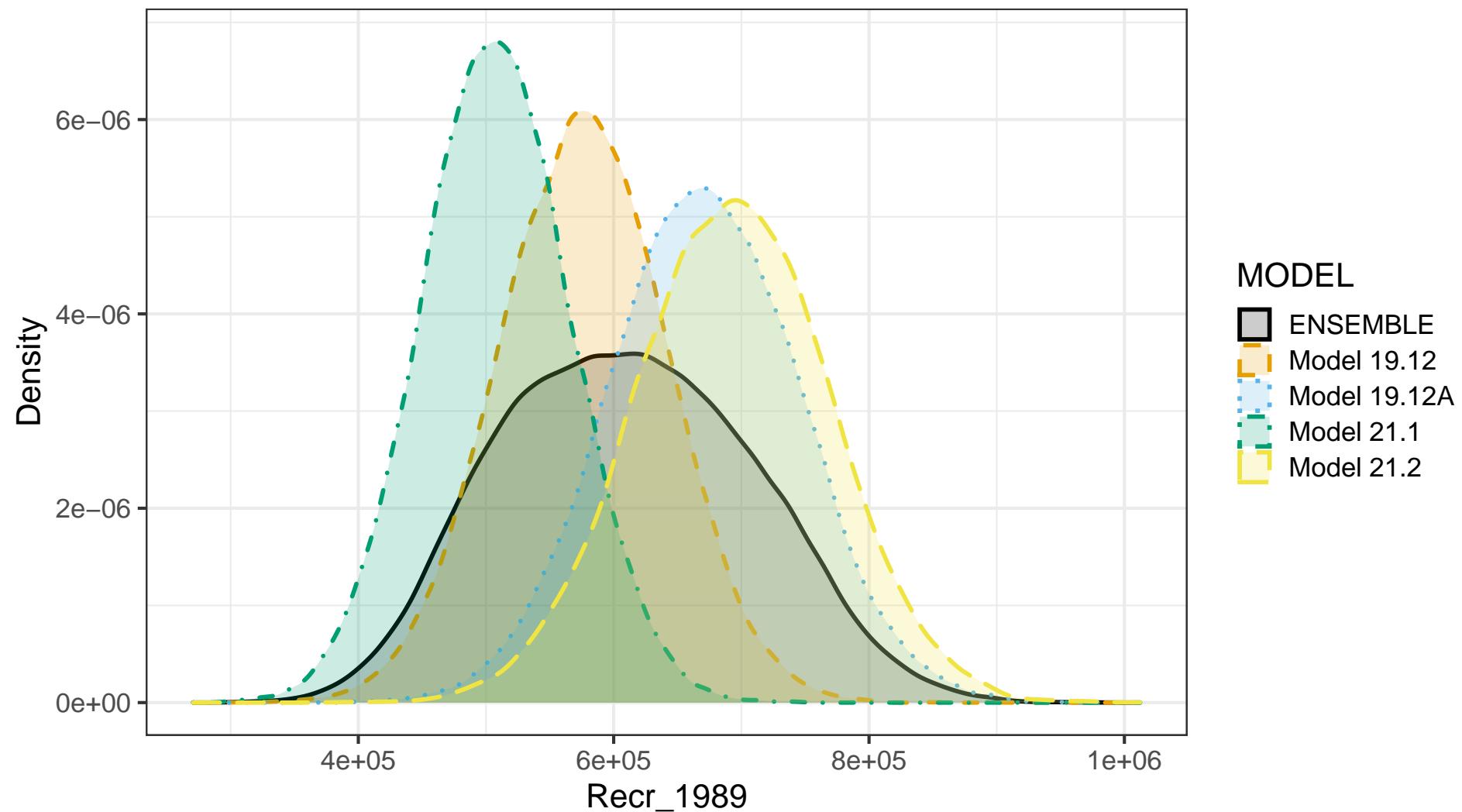
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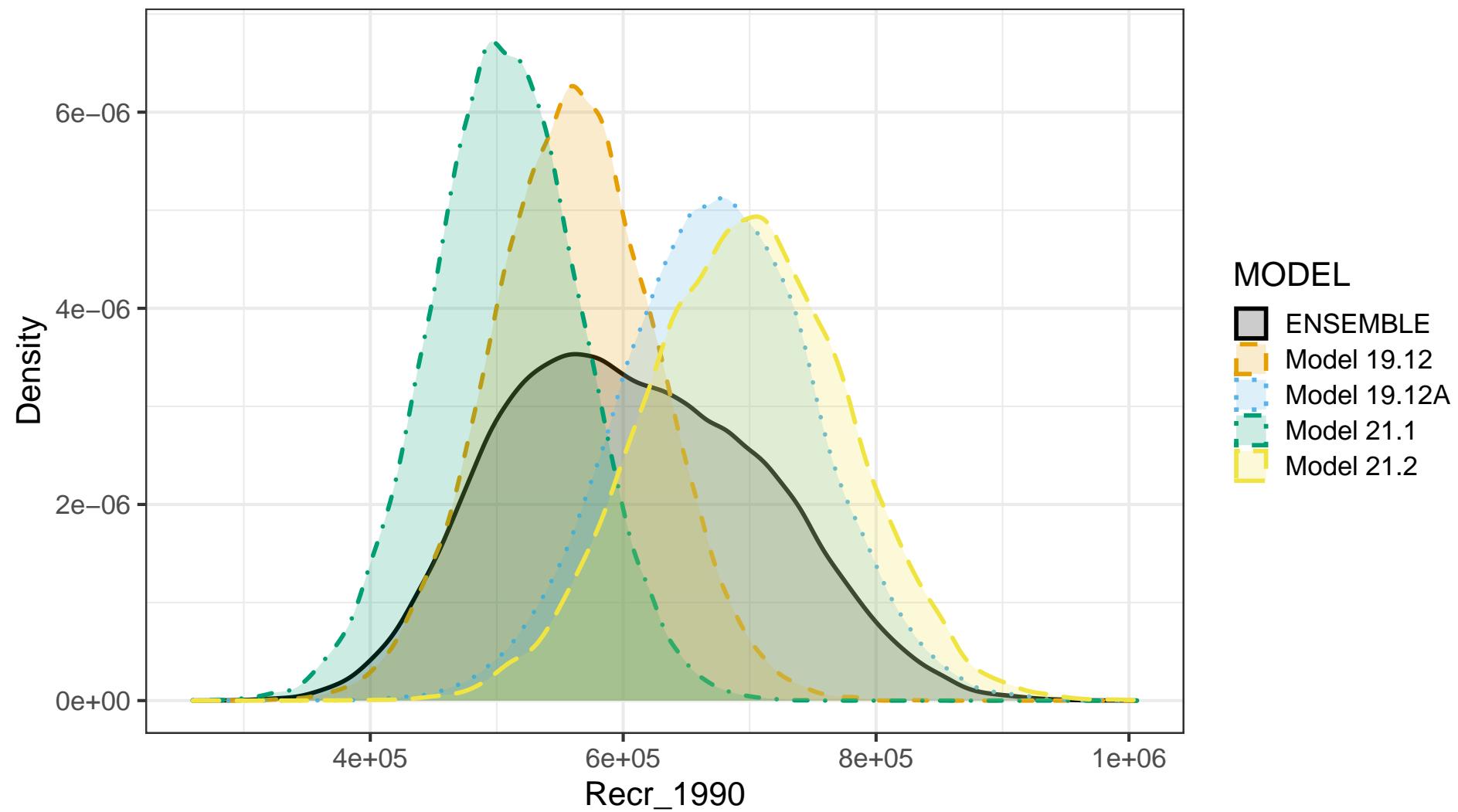
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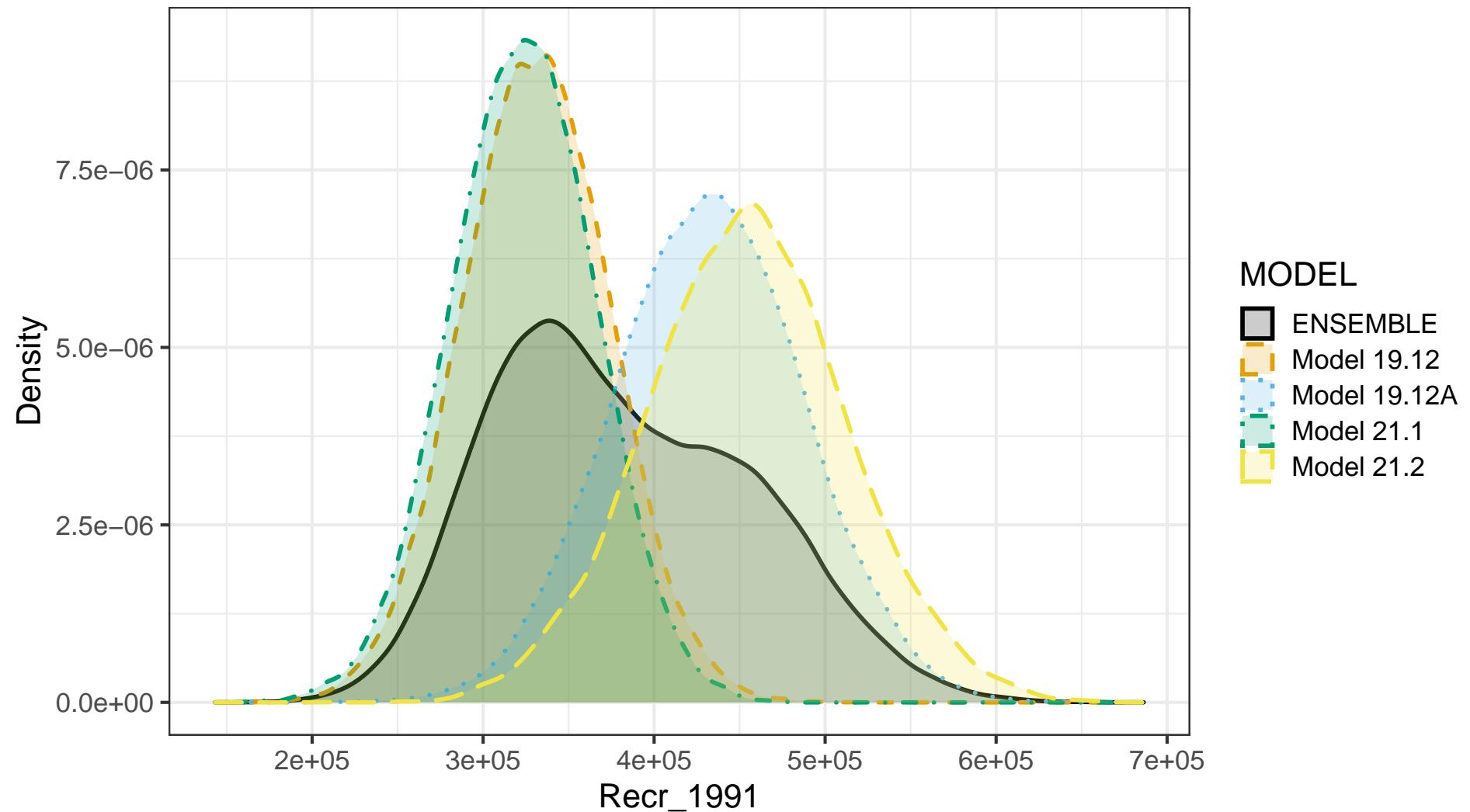
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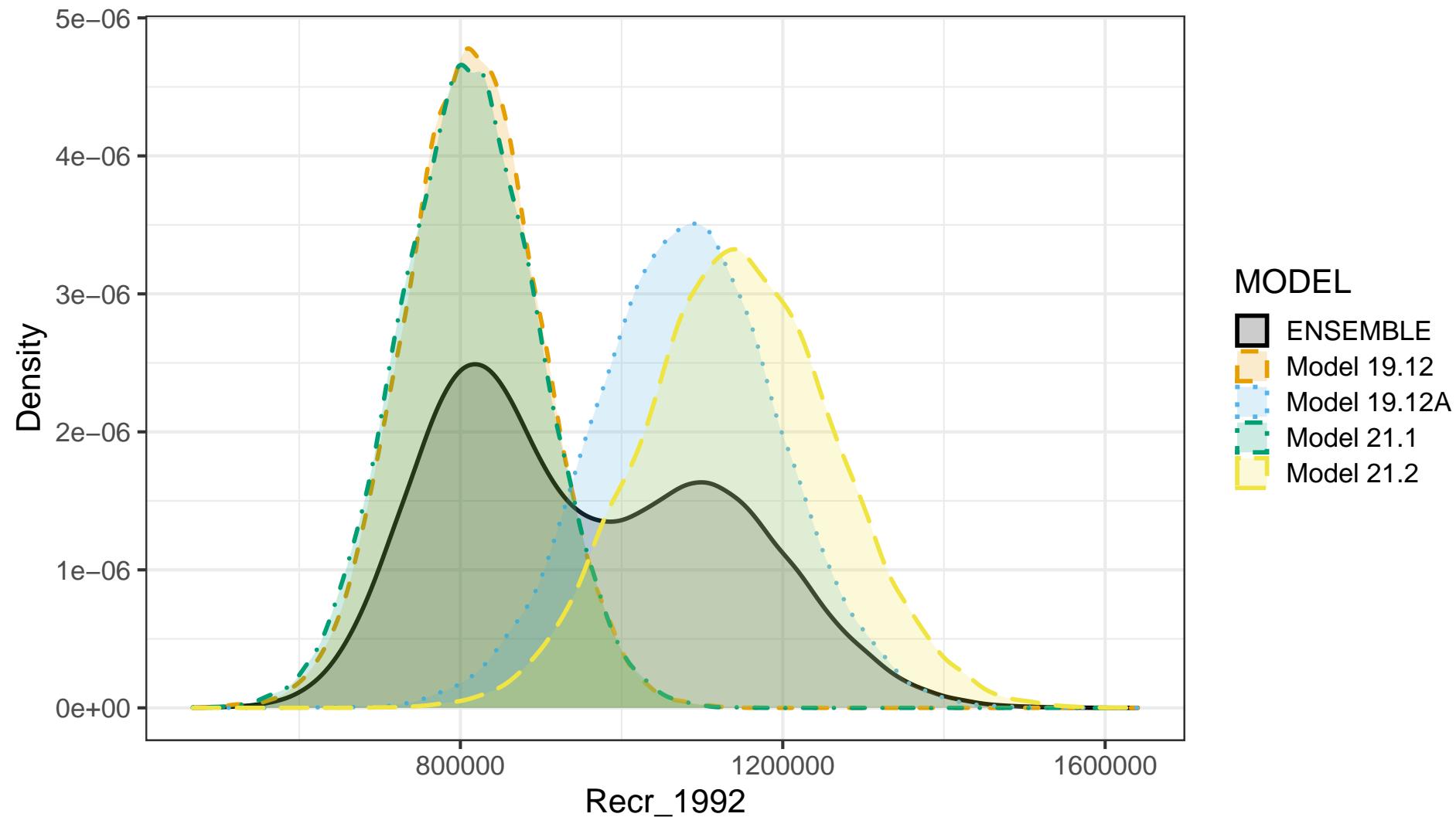
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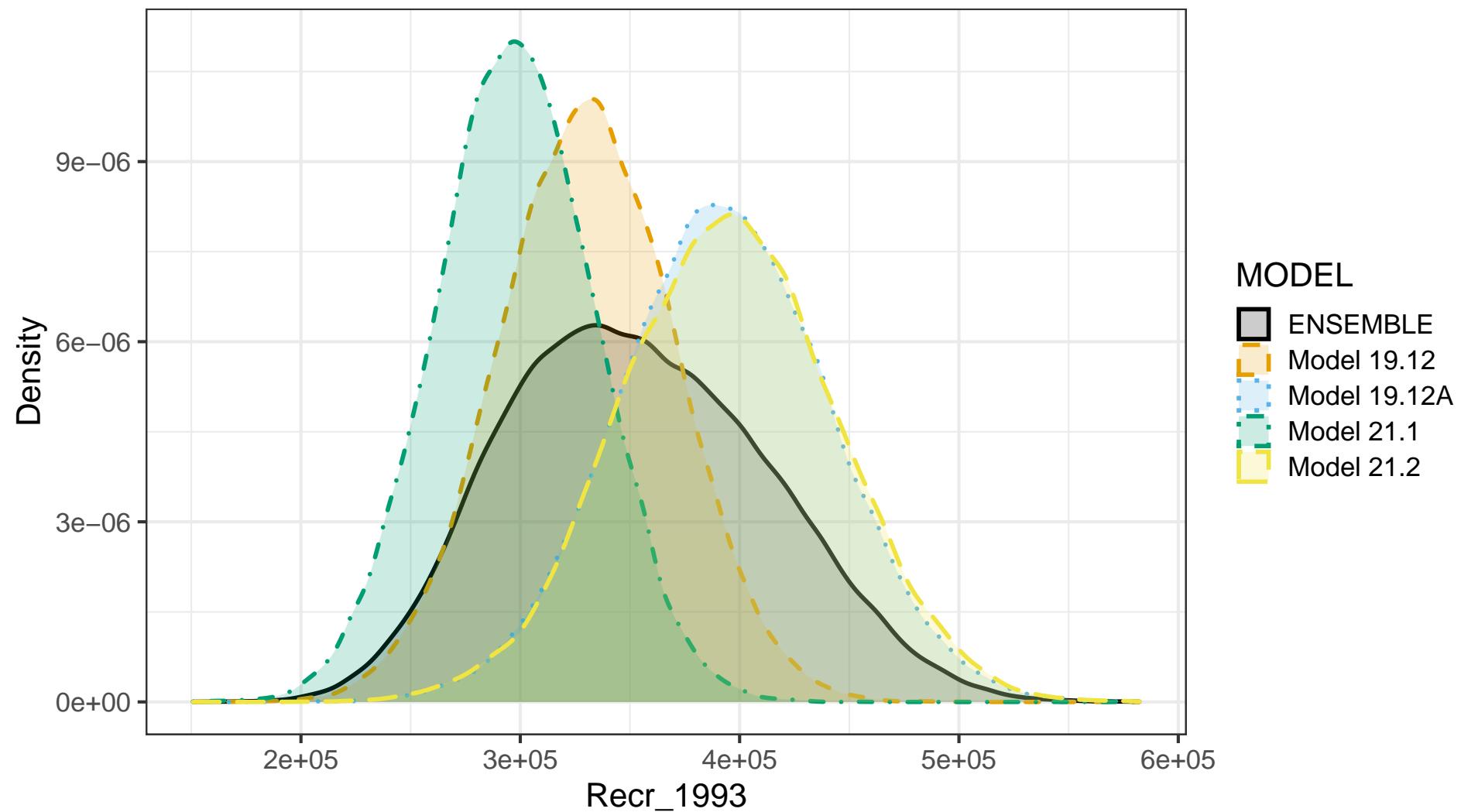
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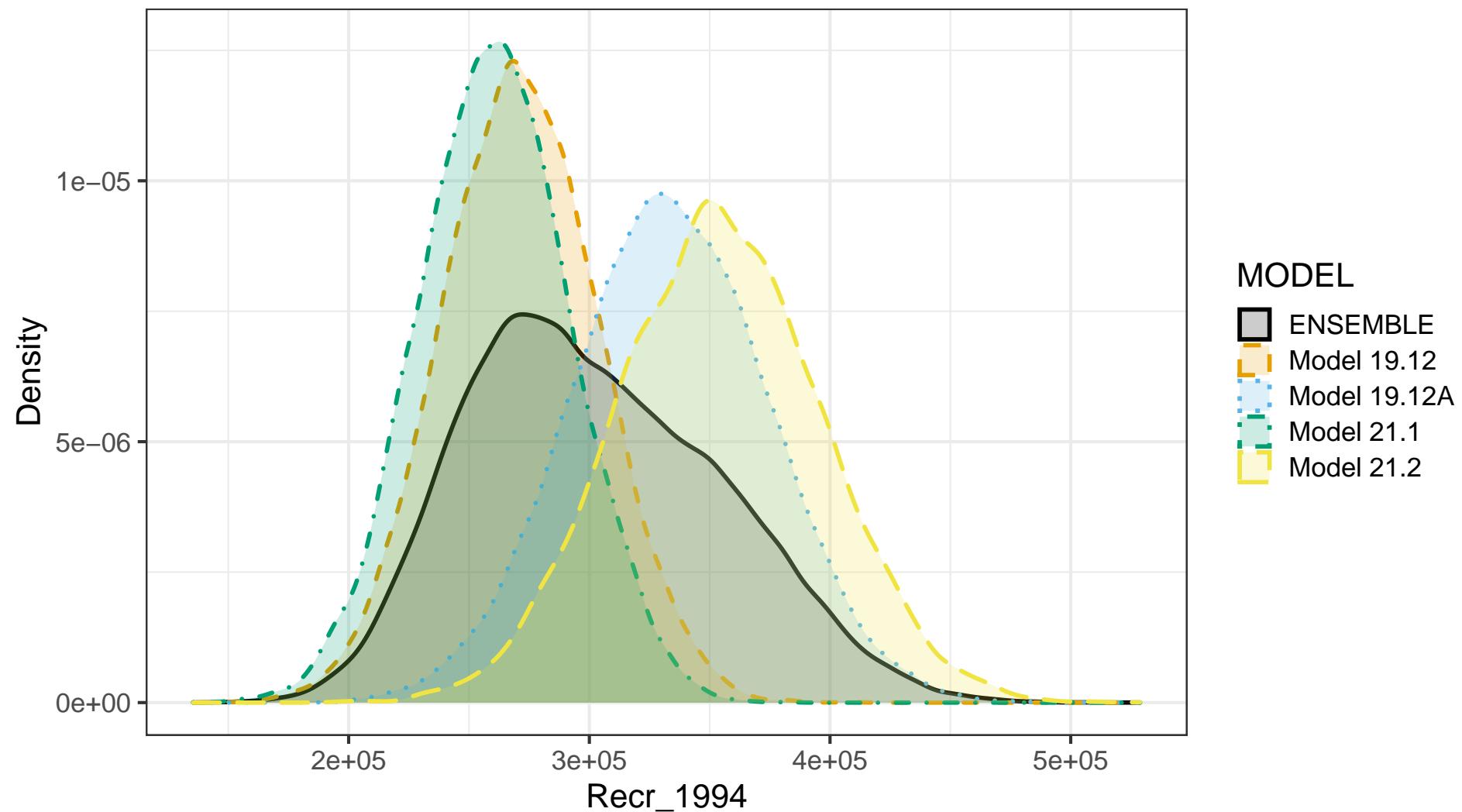
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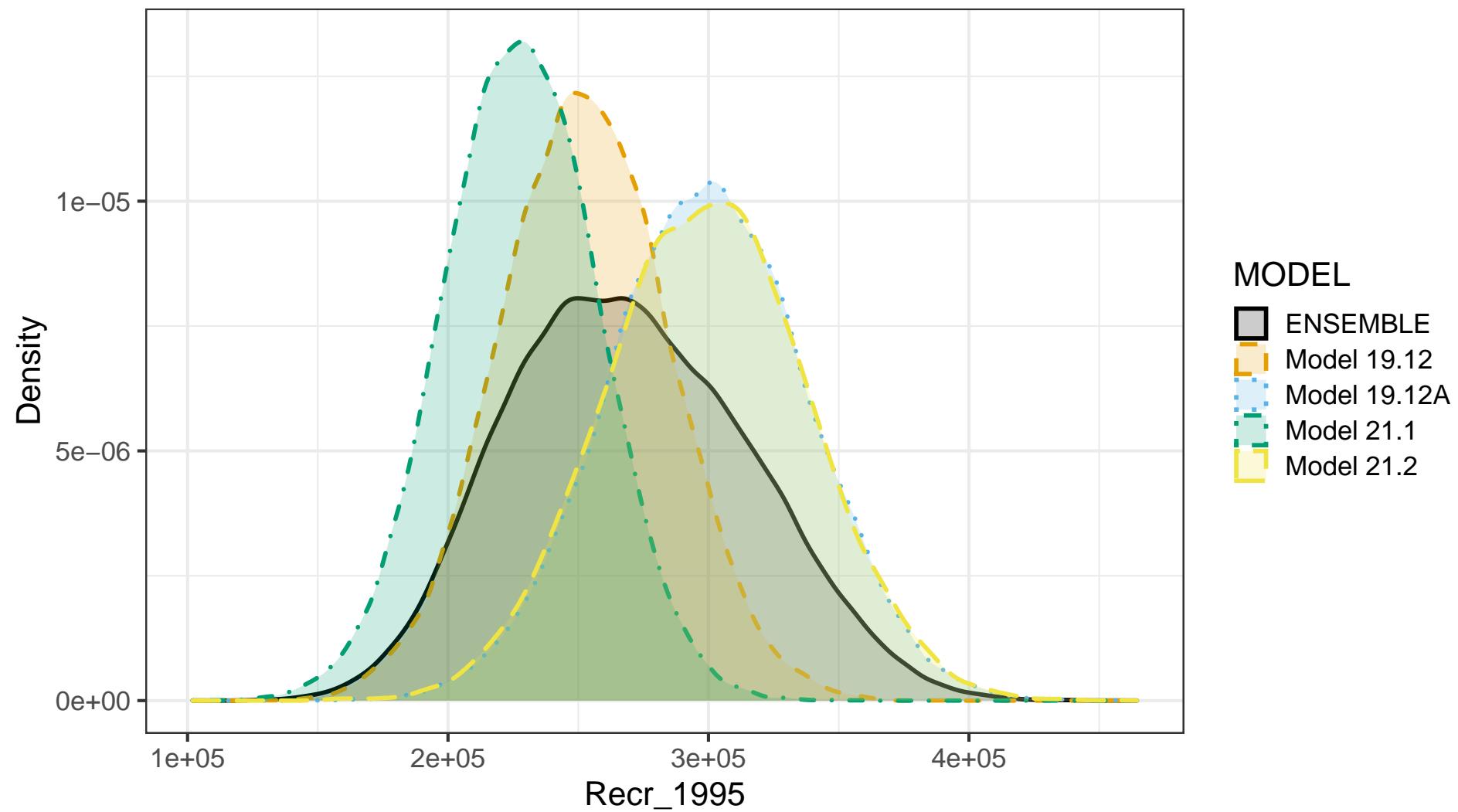
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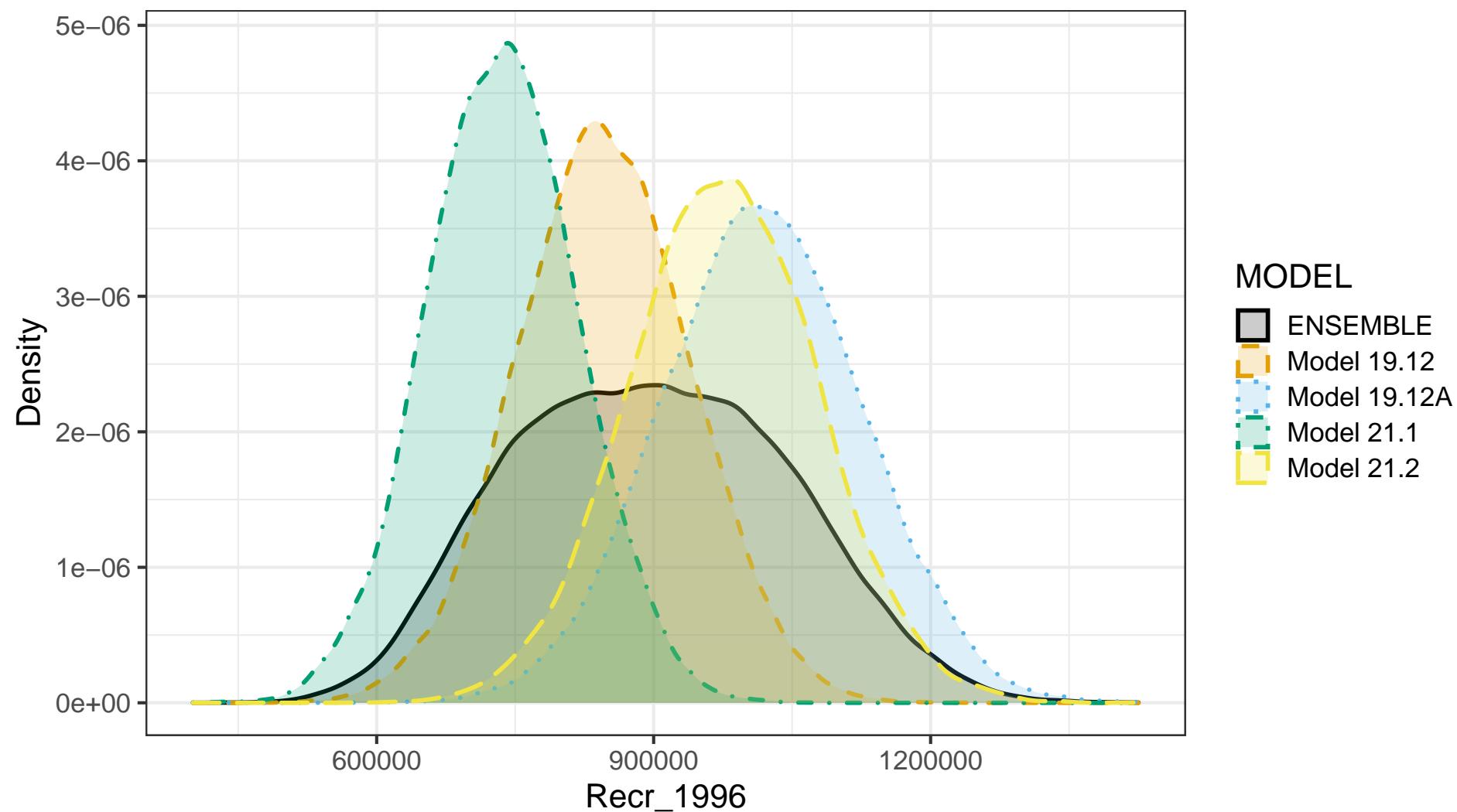
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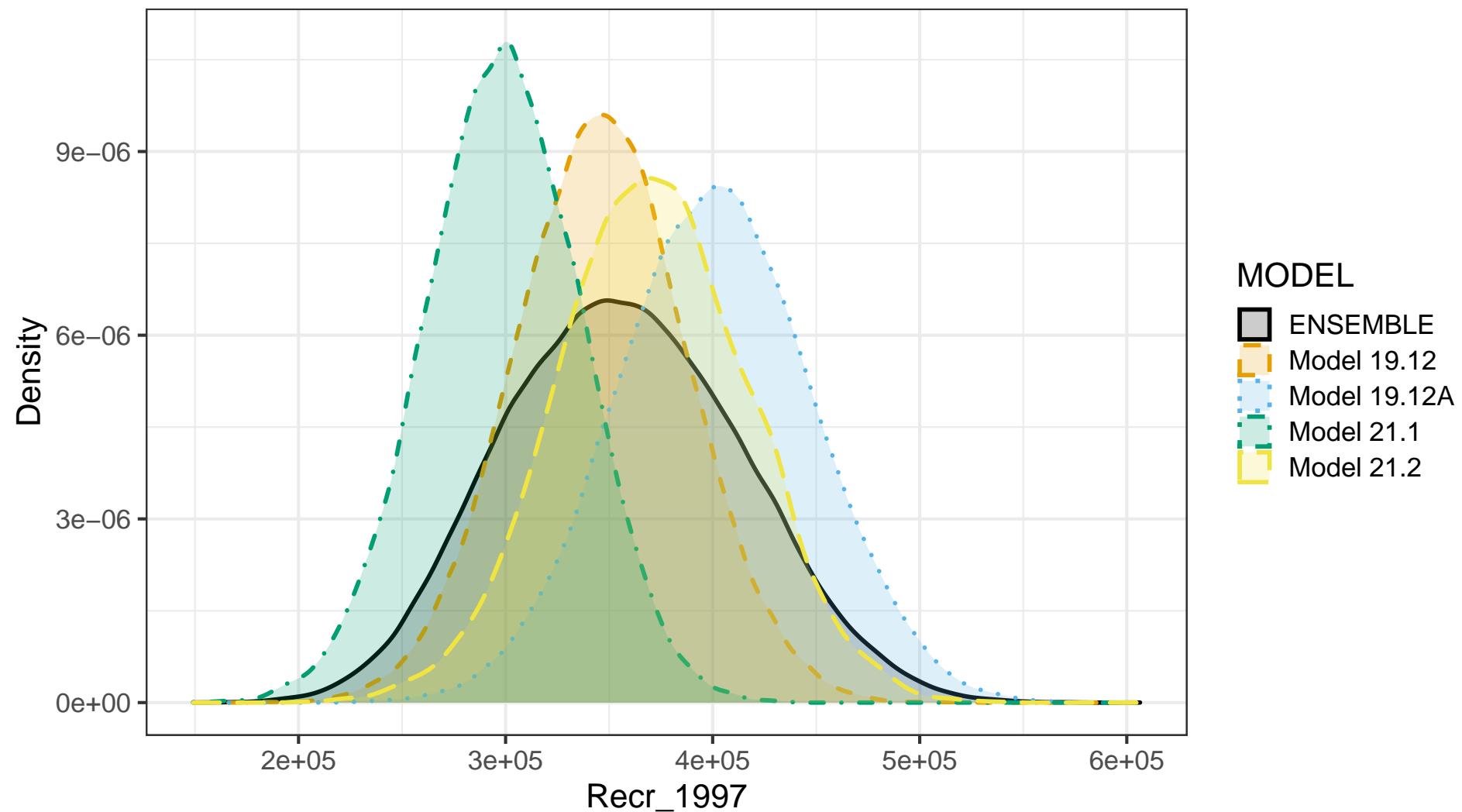
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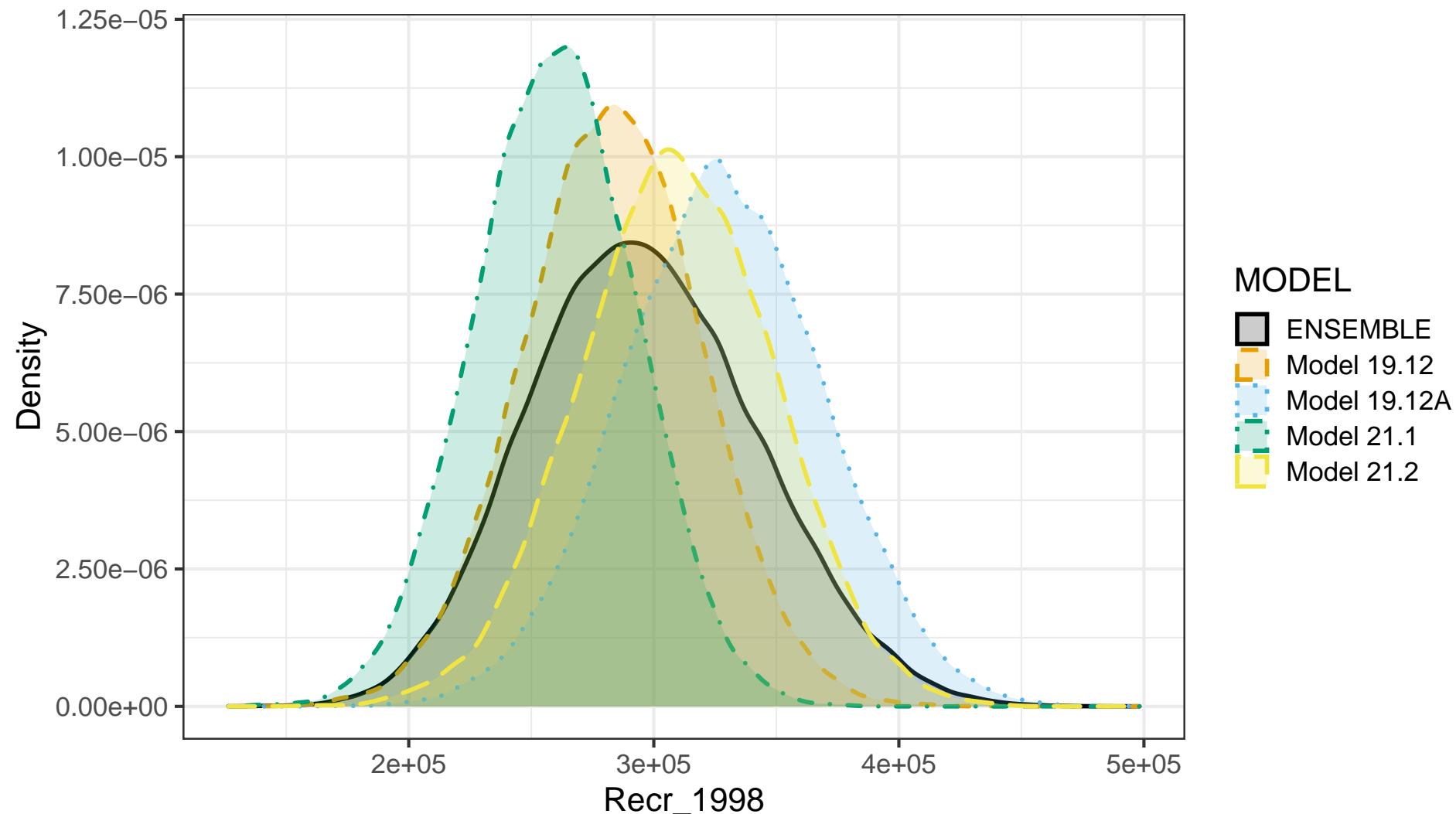
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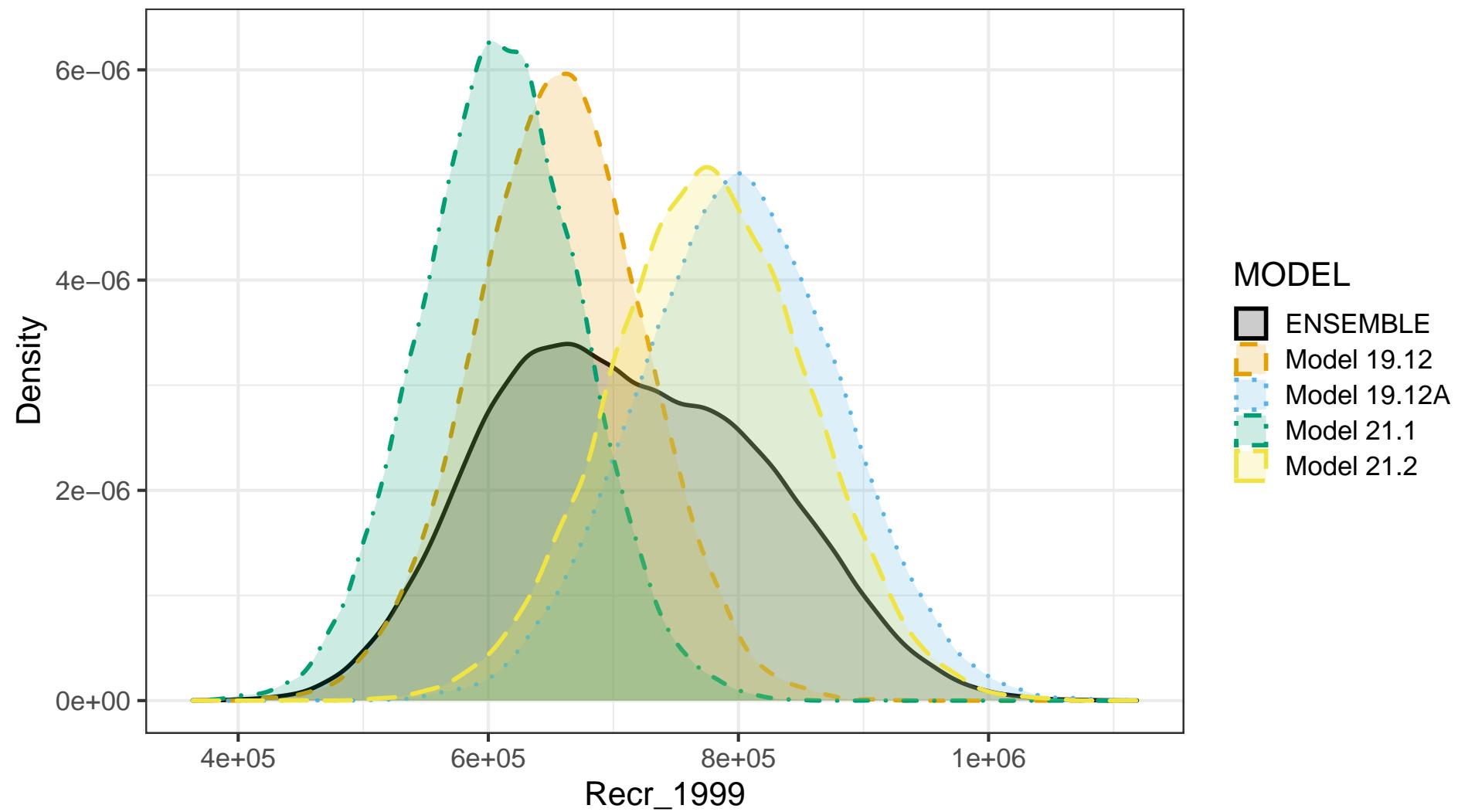
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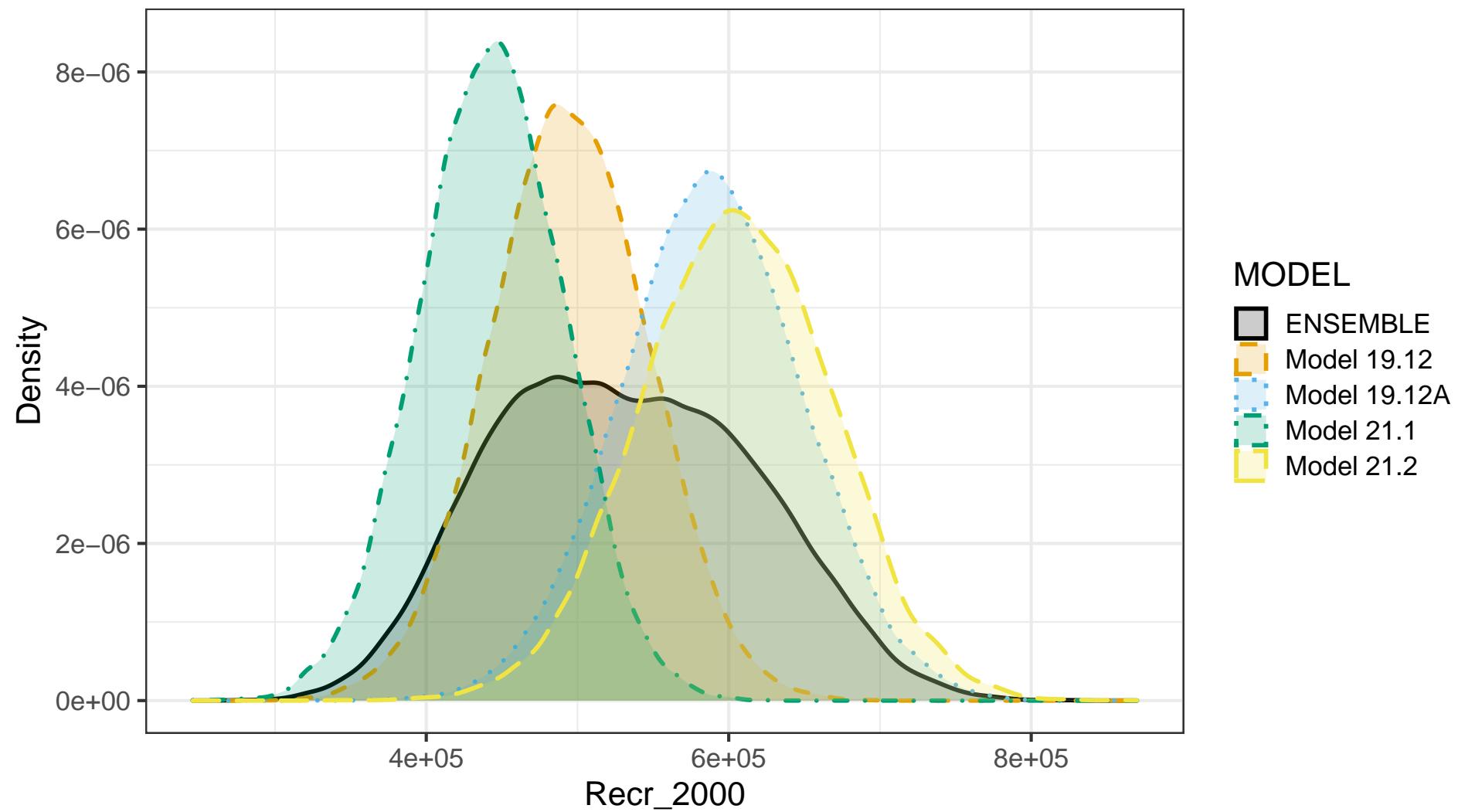
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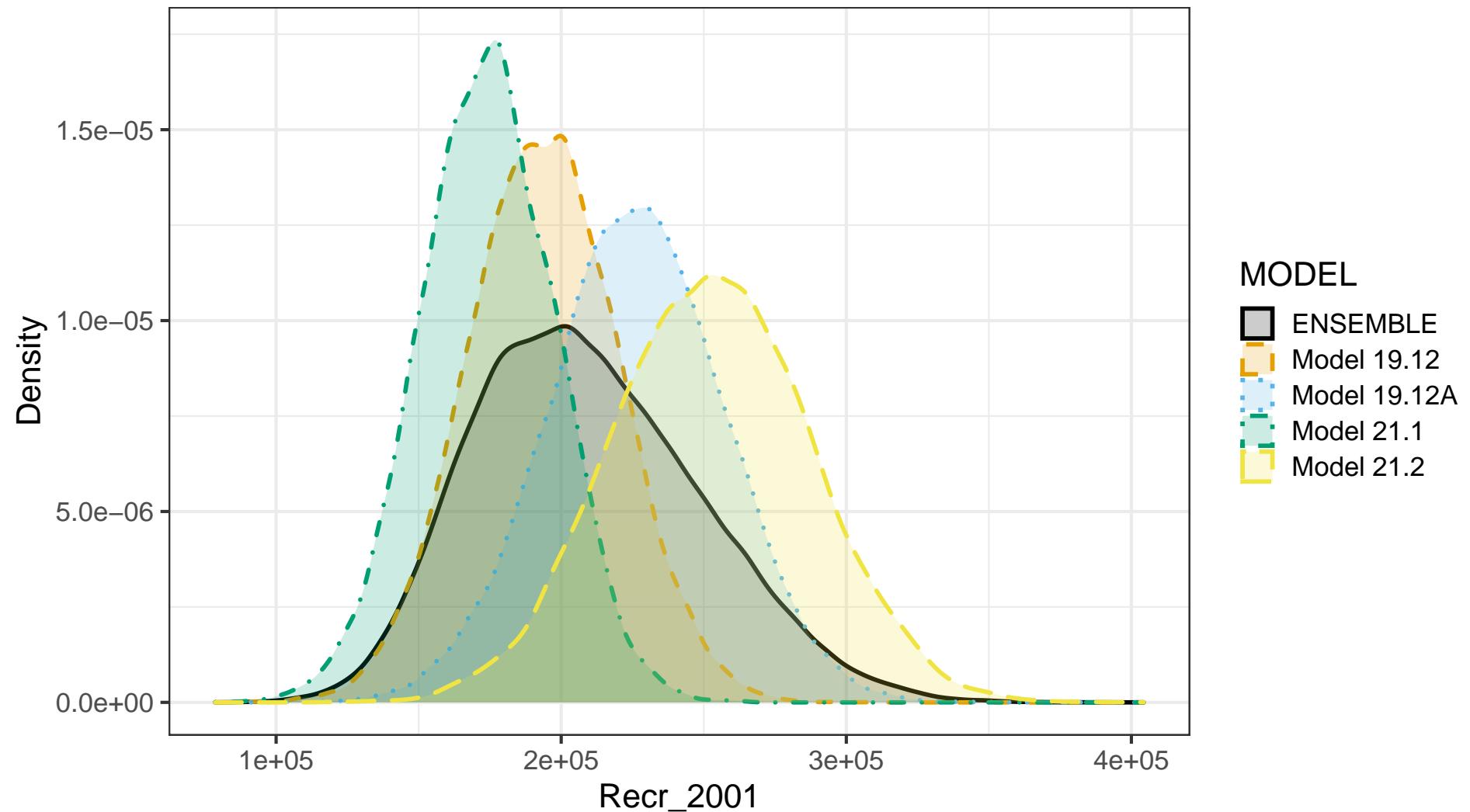
Recr_1999



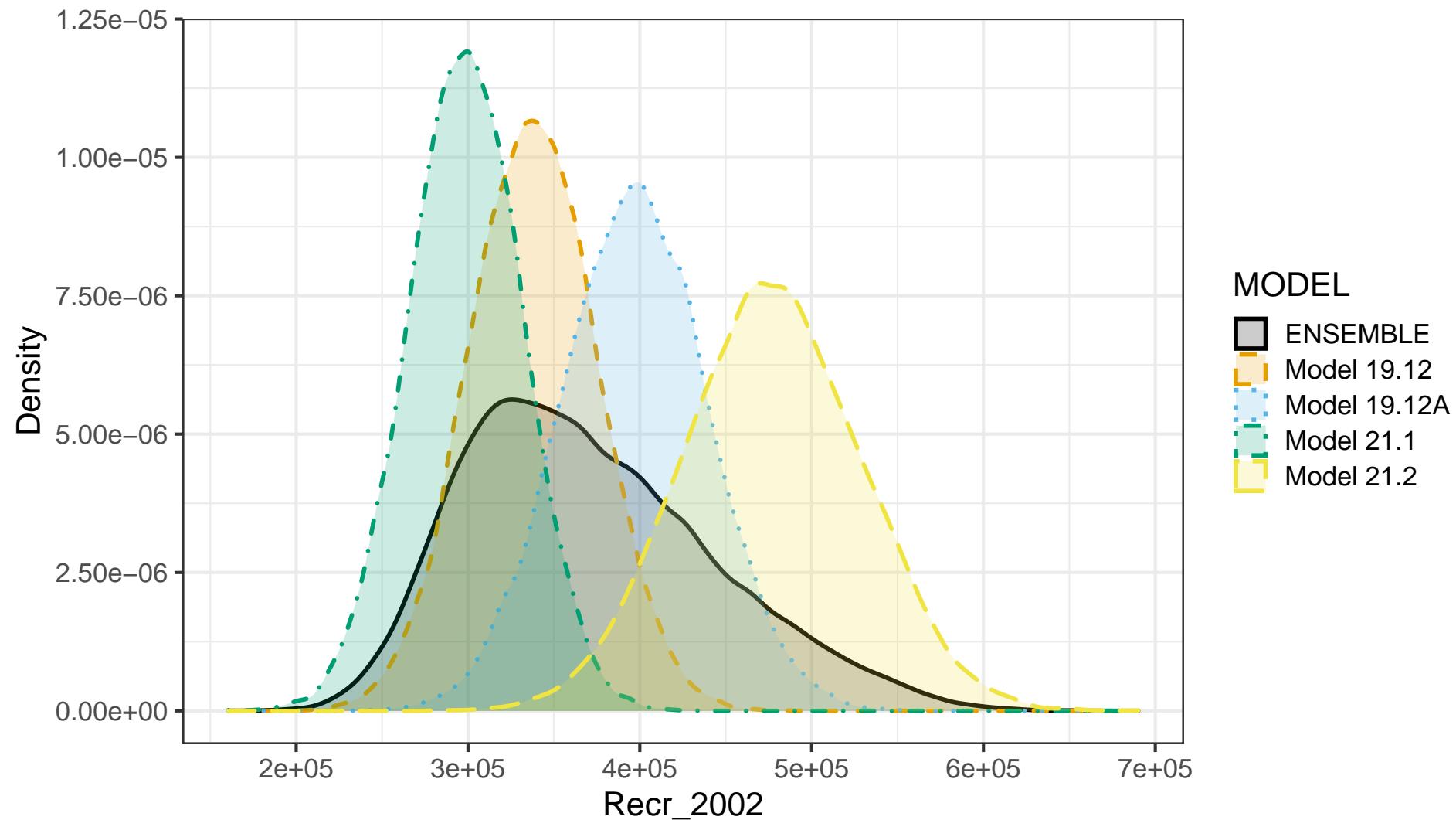
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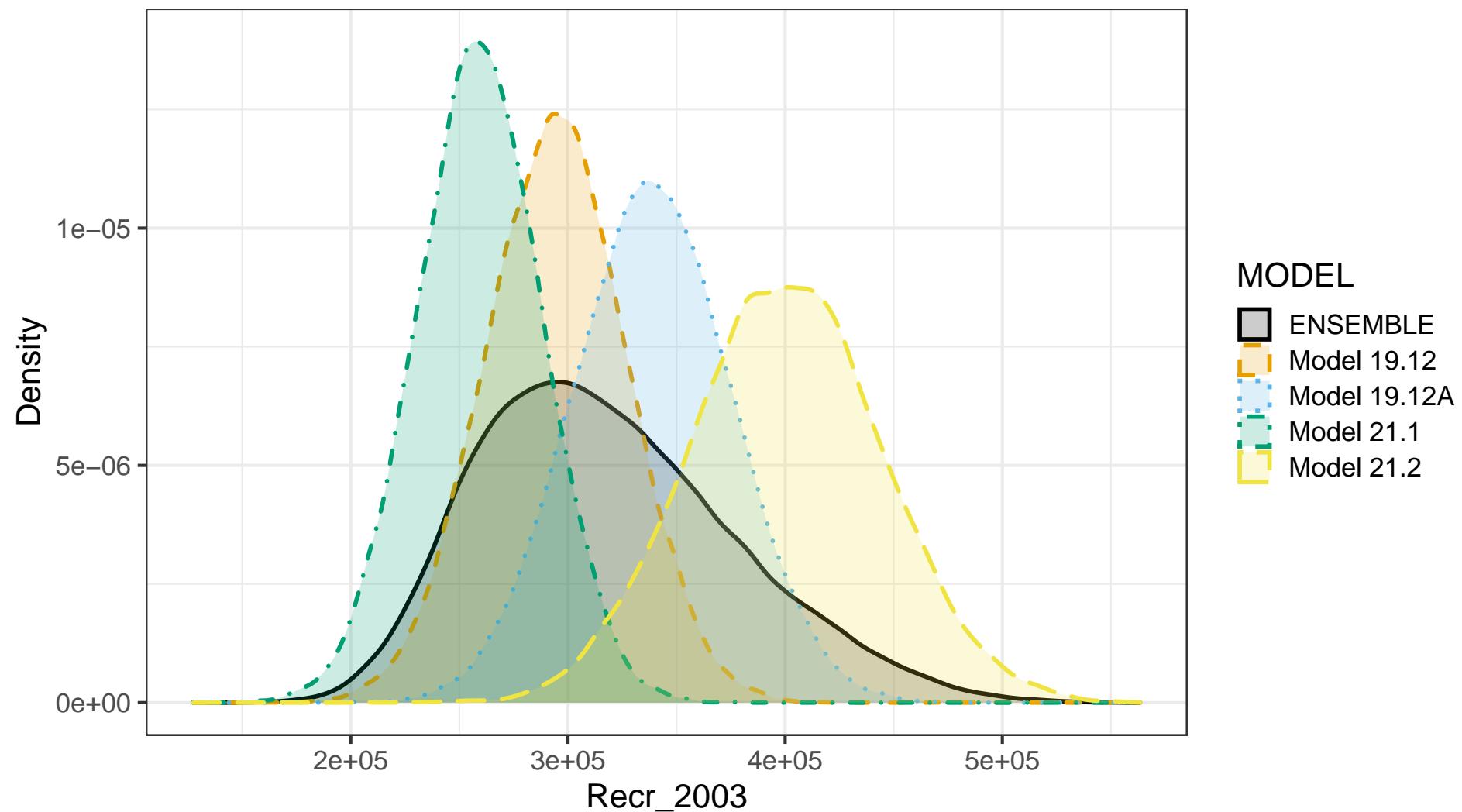
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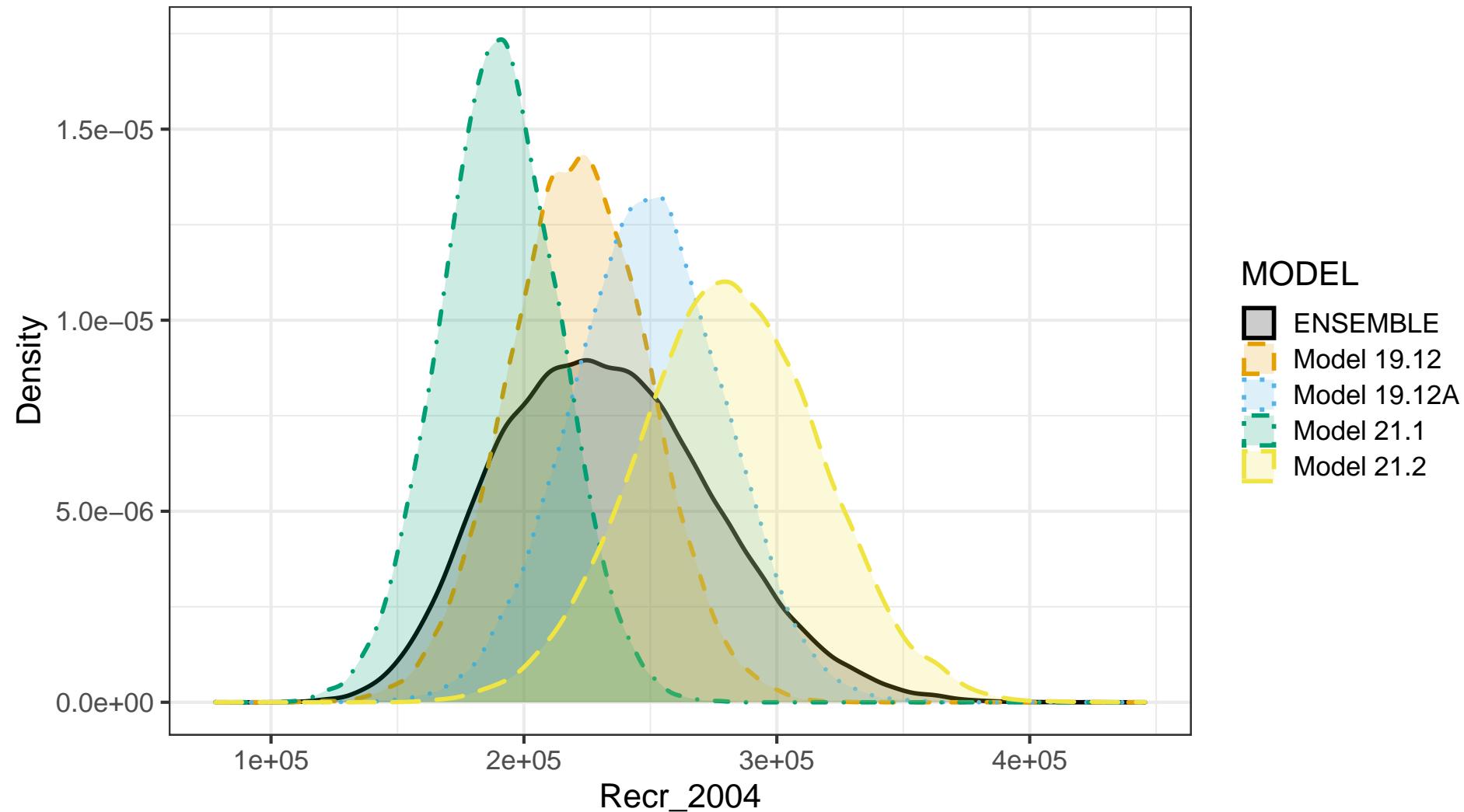
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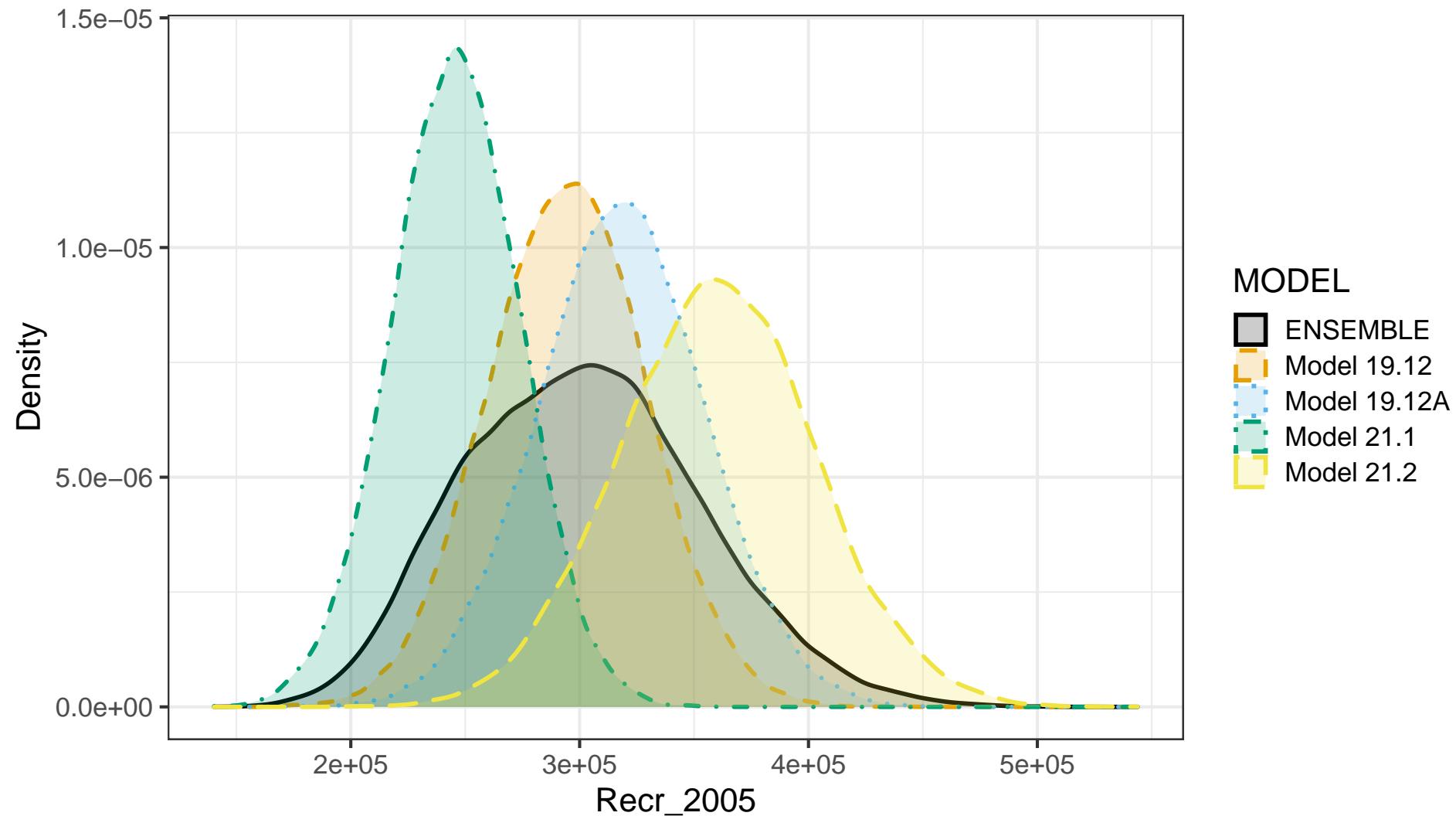
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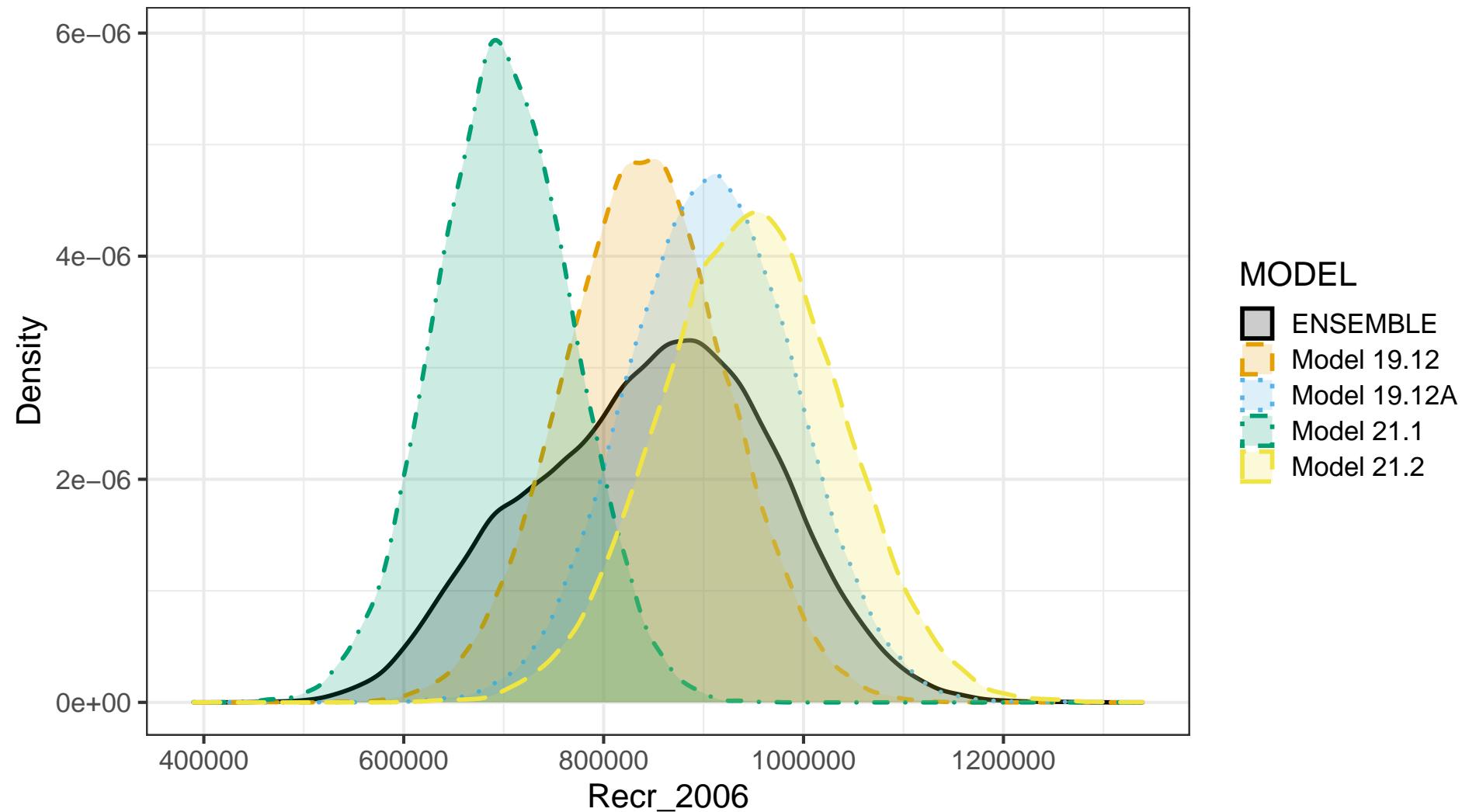
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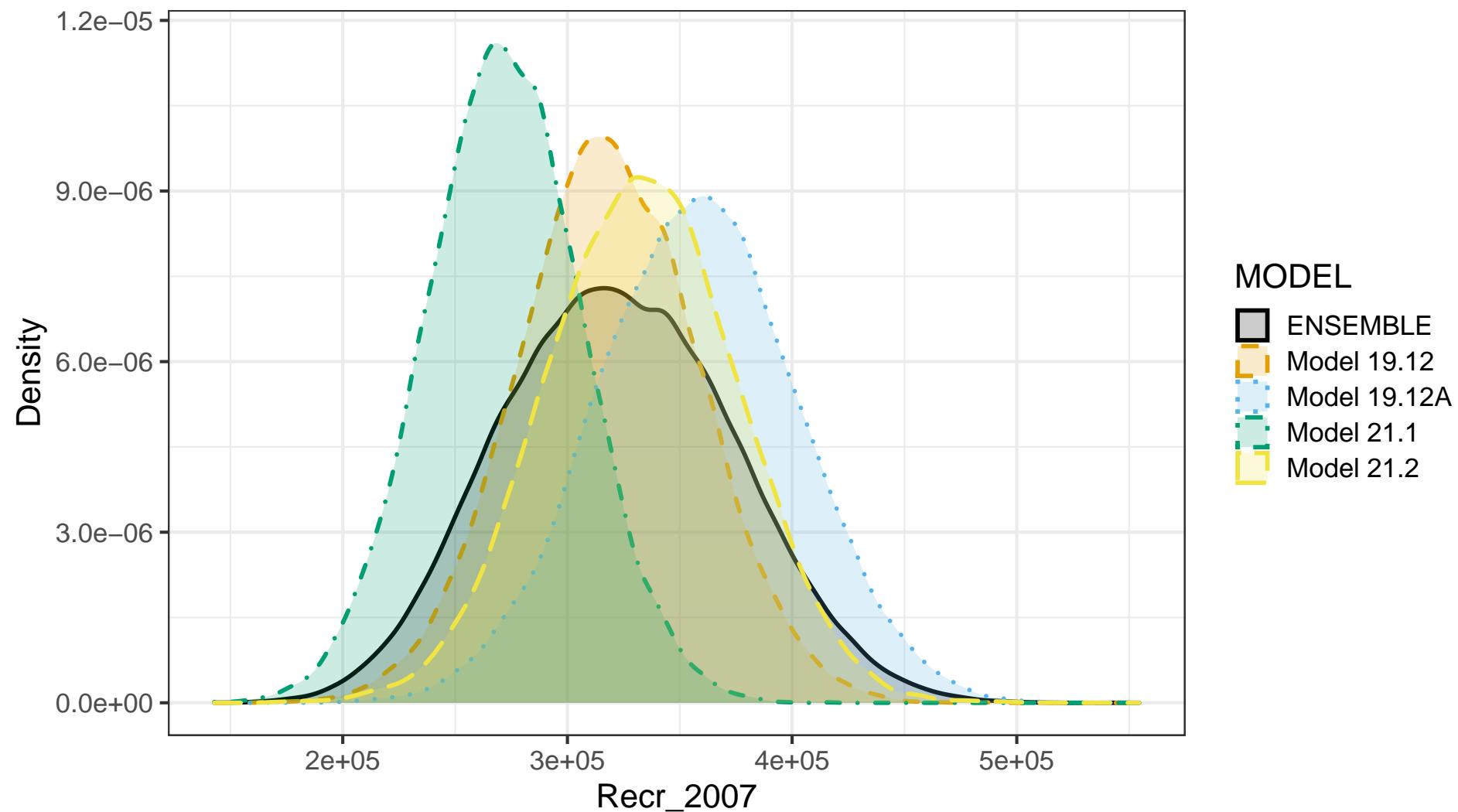
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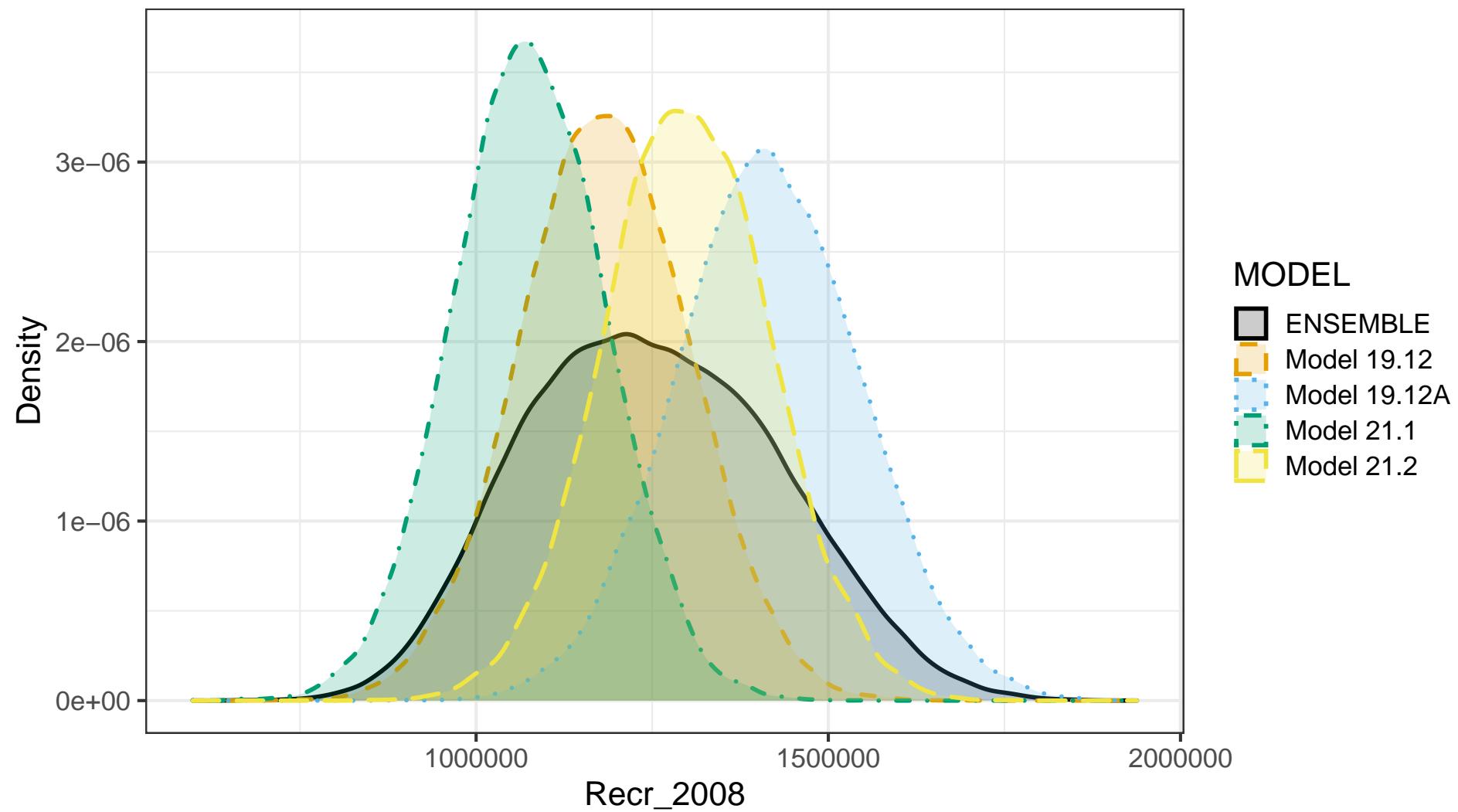
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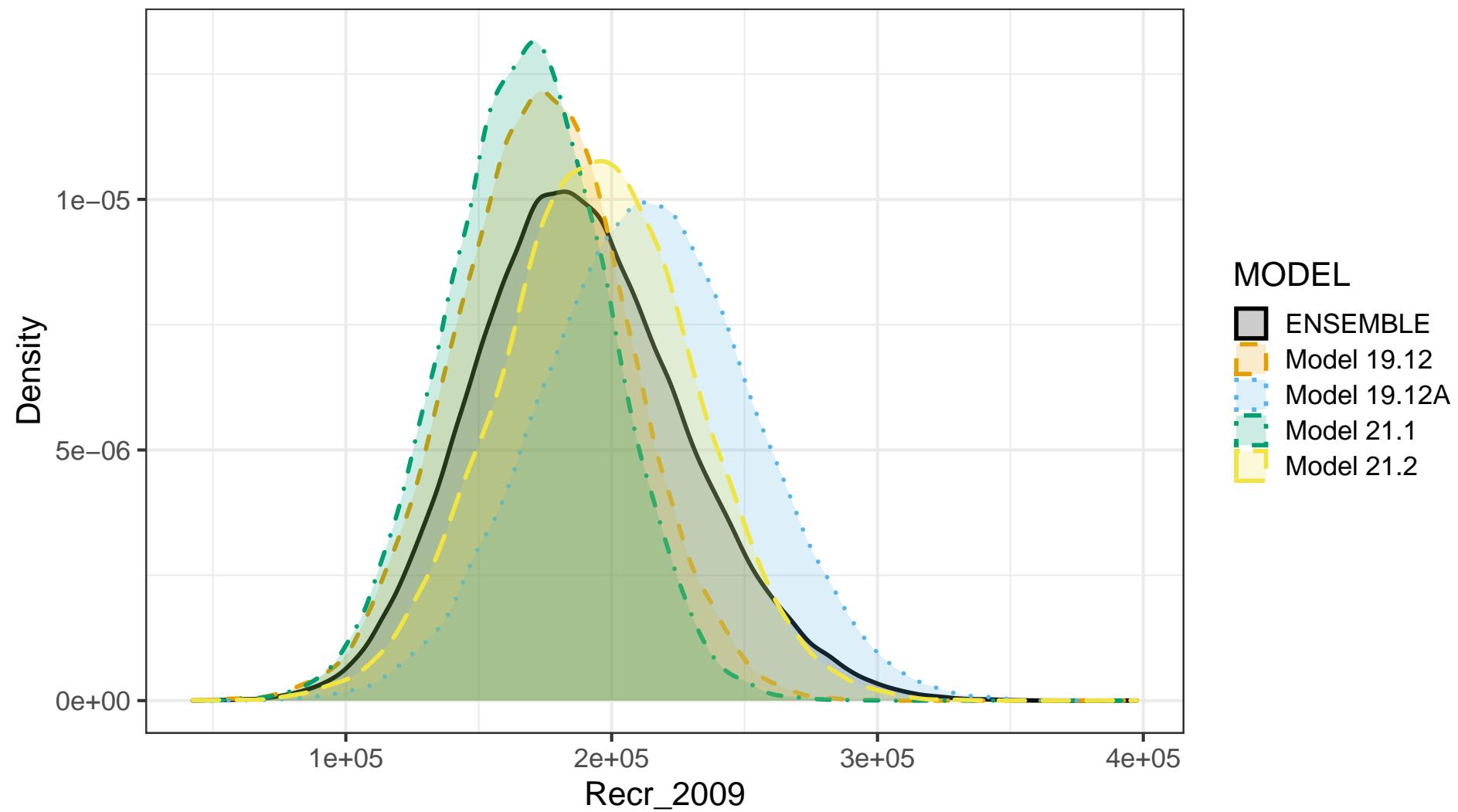
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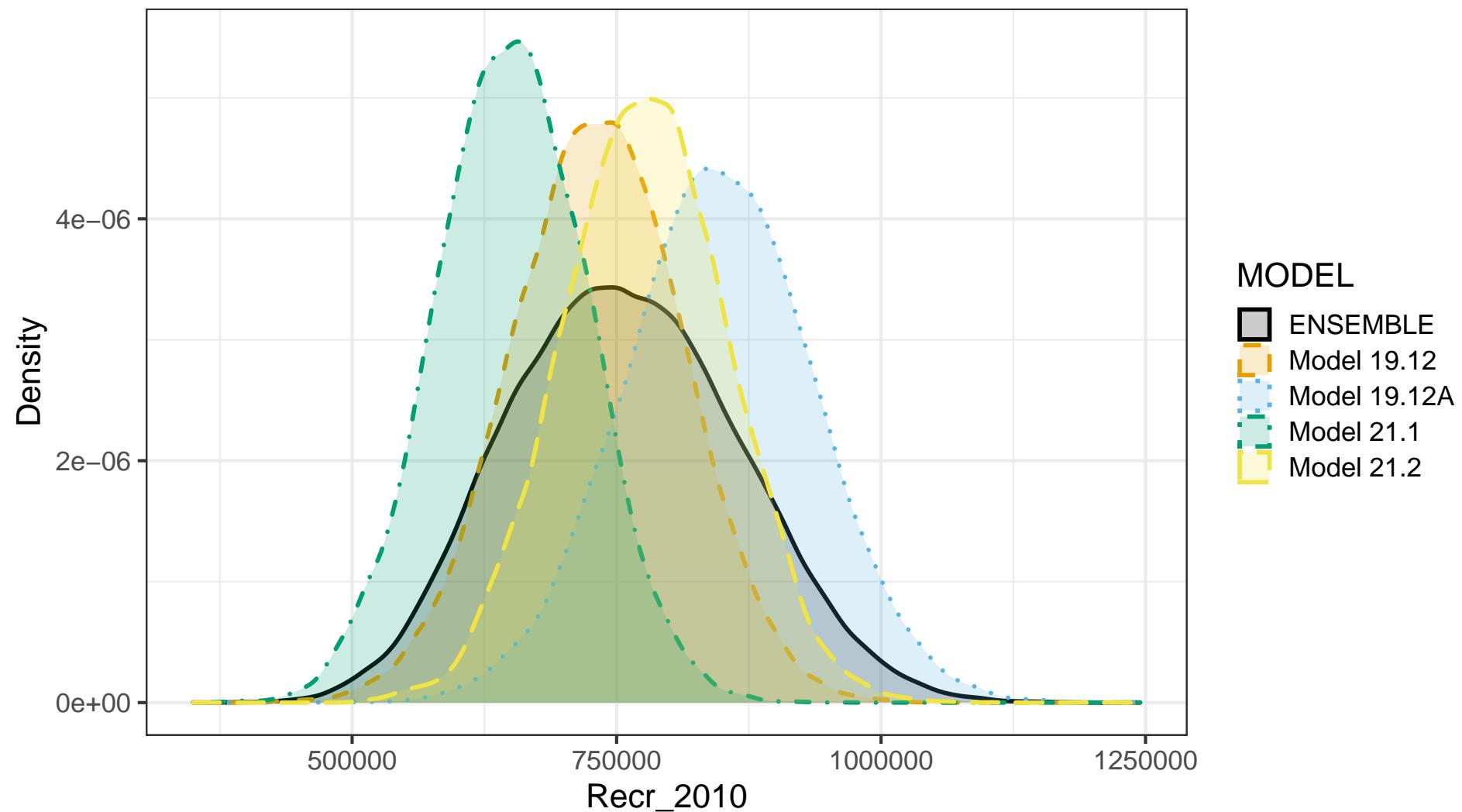
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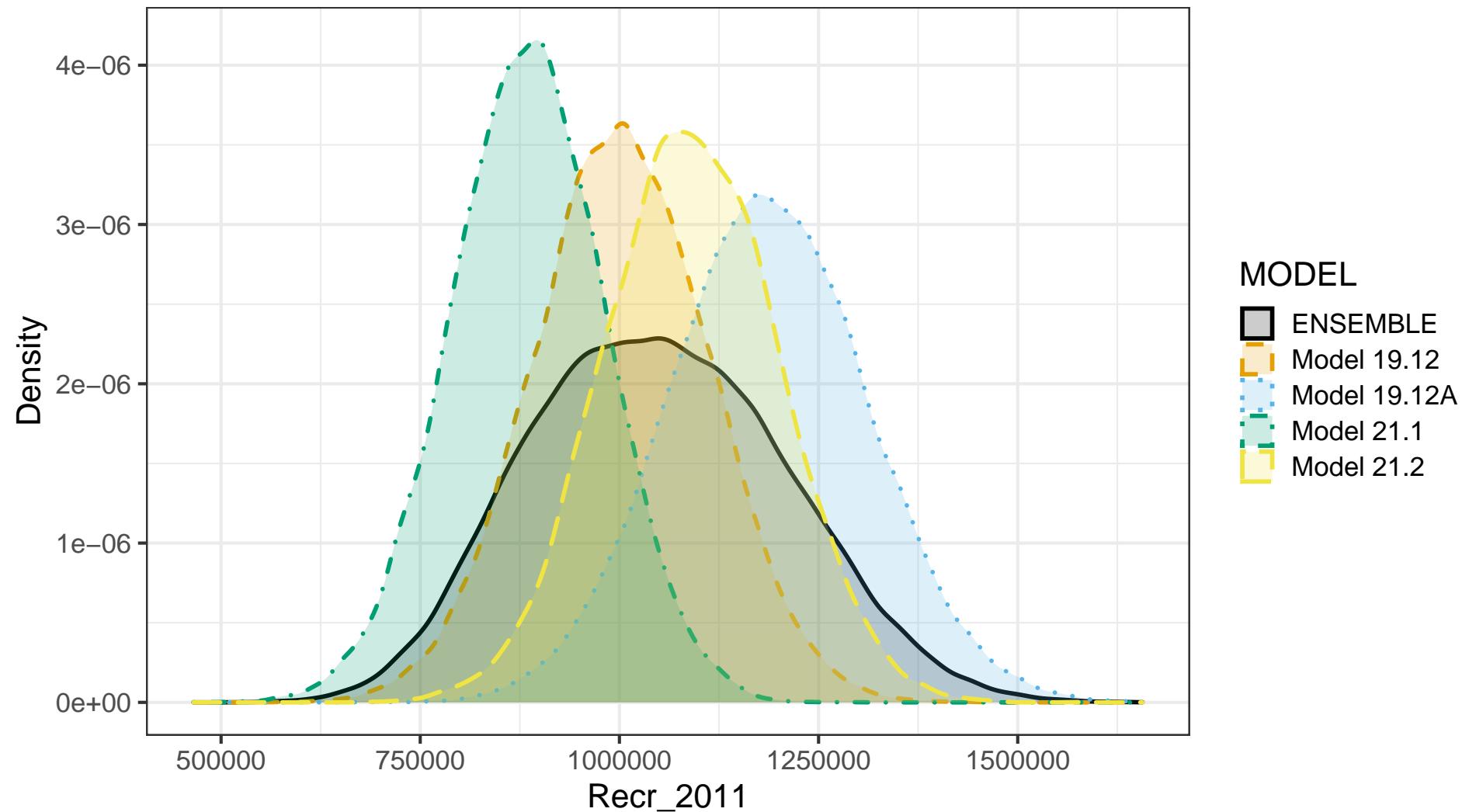
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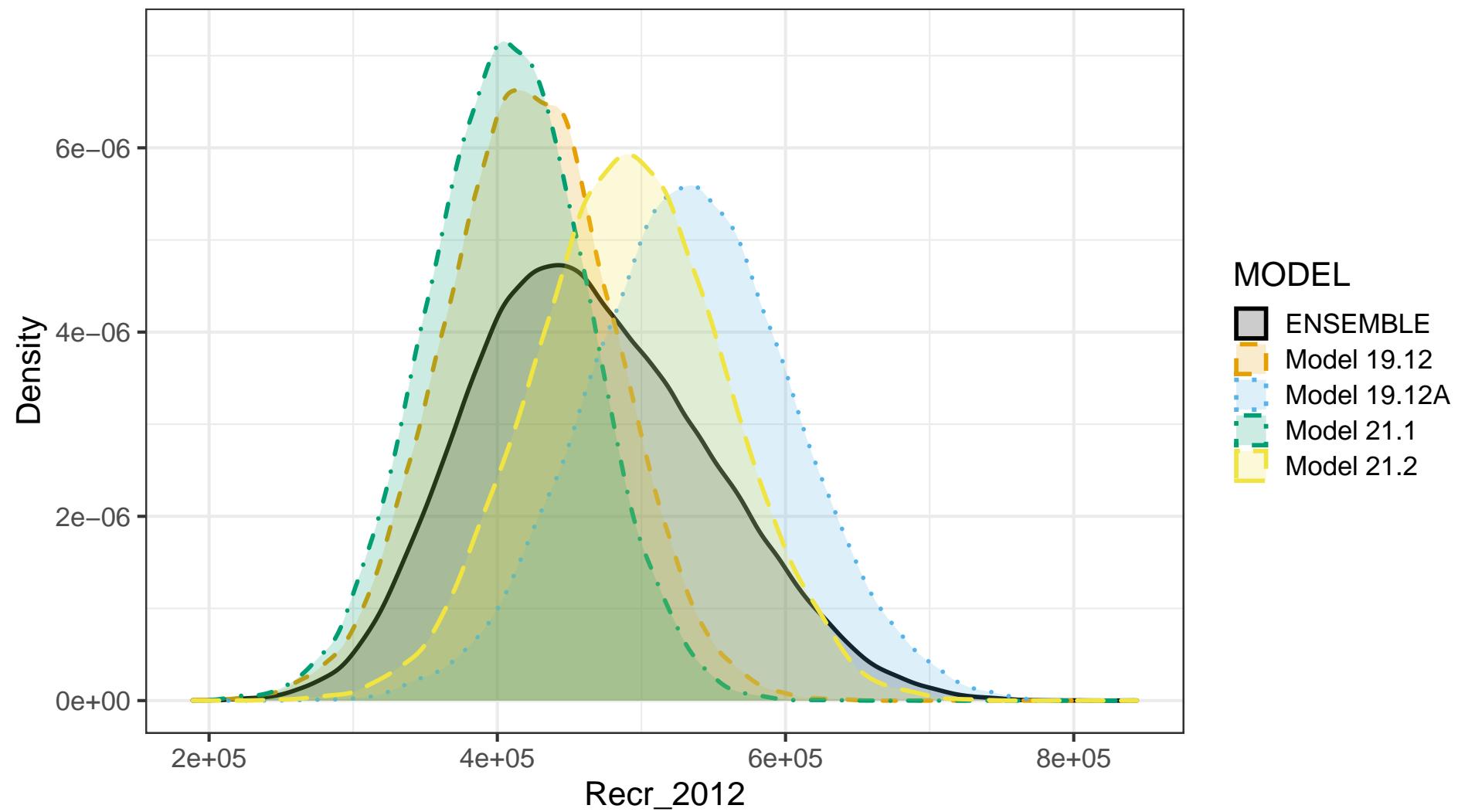
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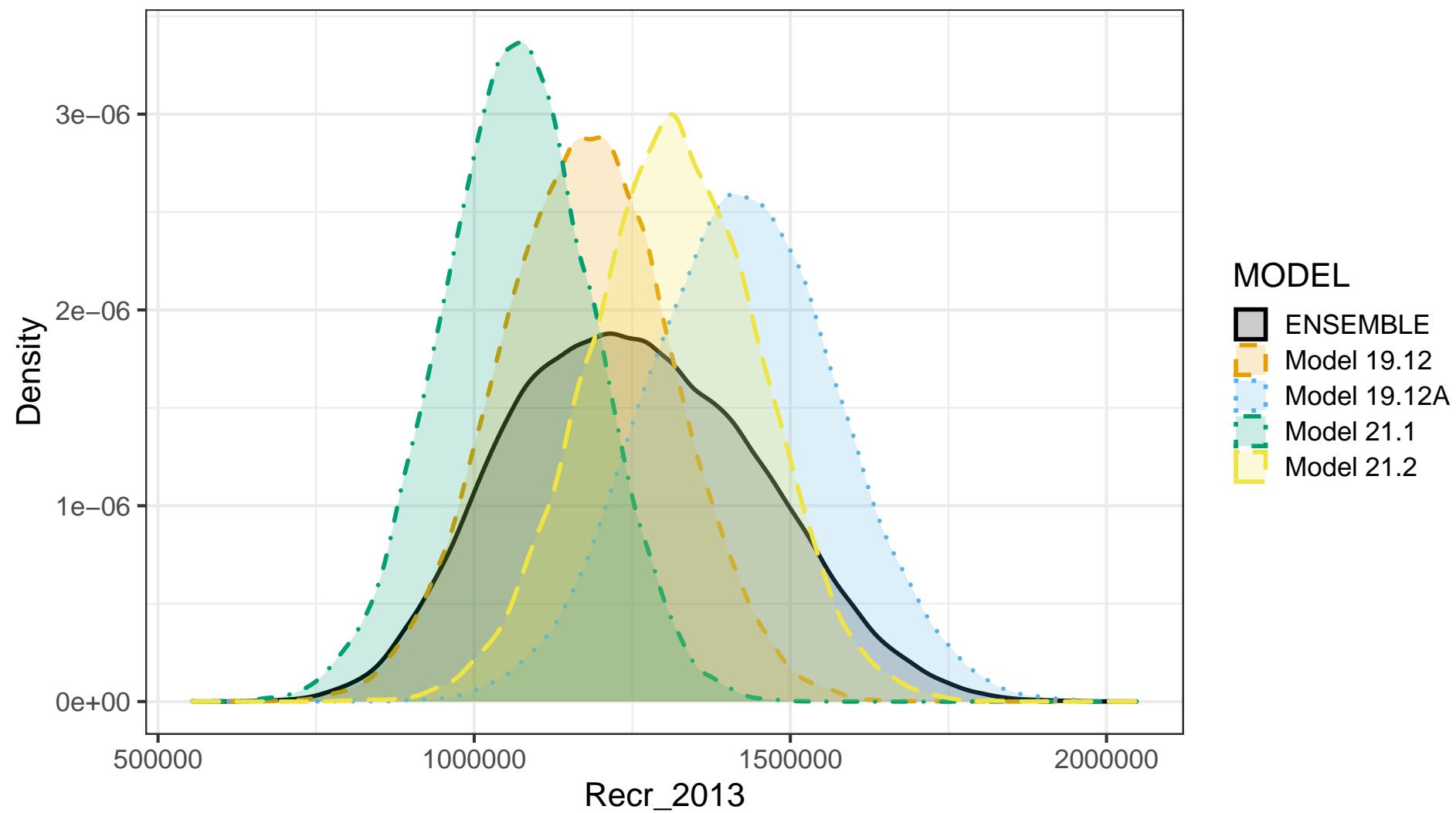
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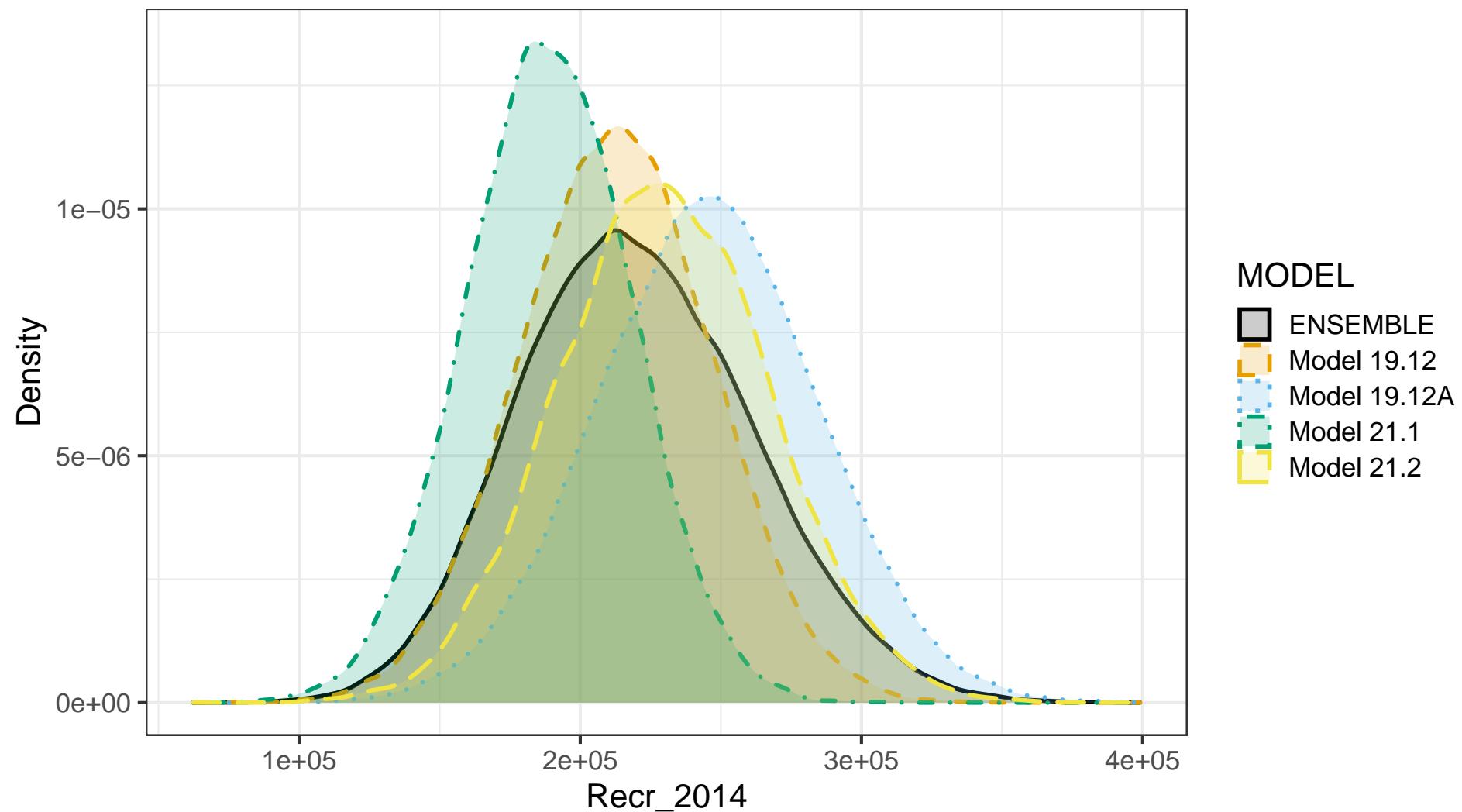
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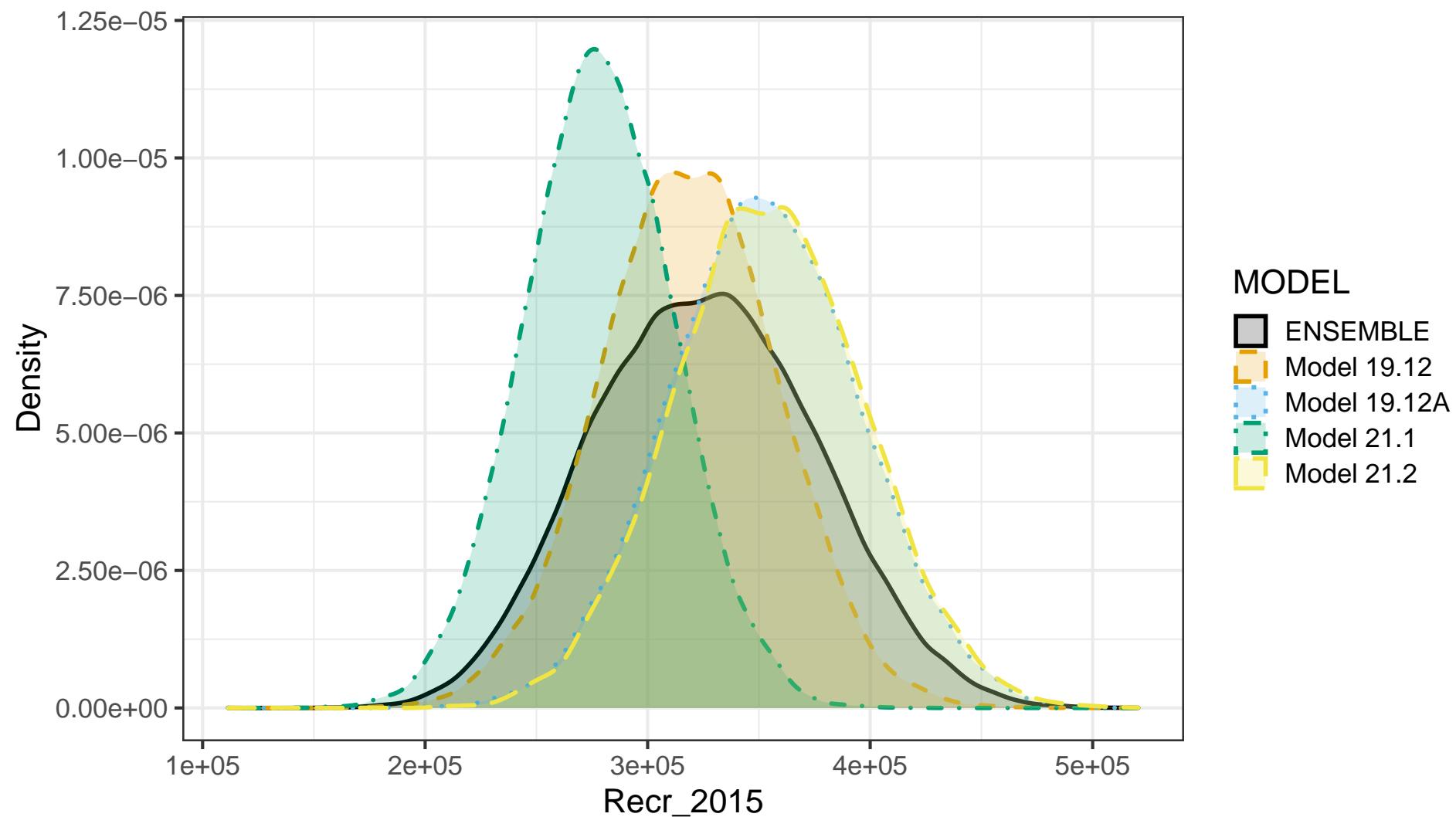
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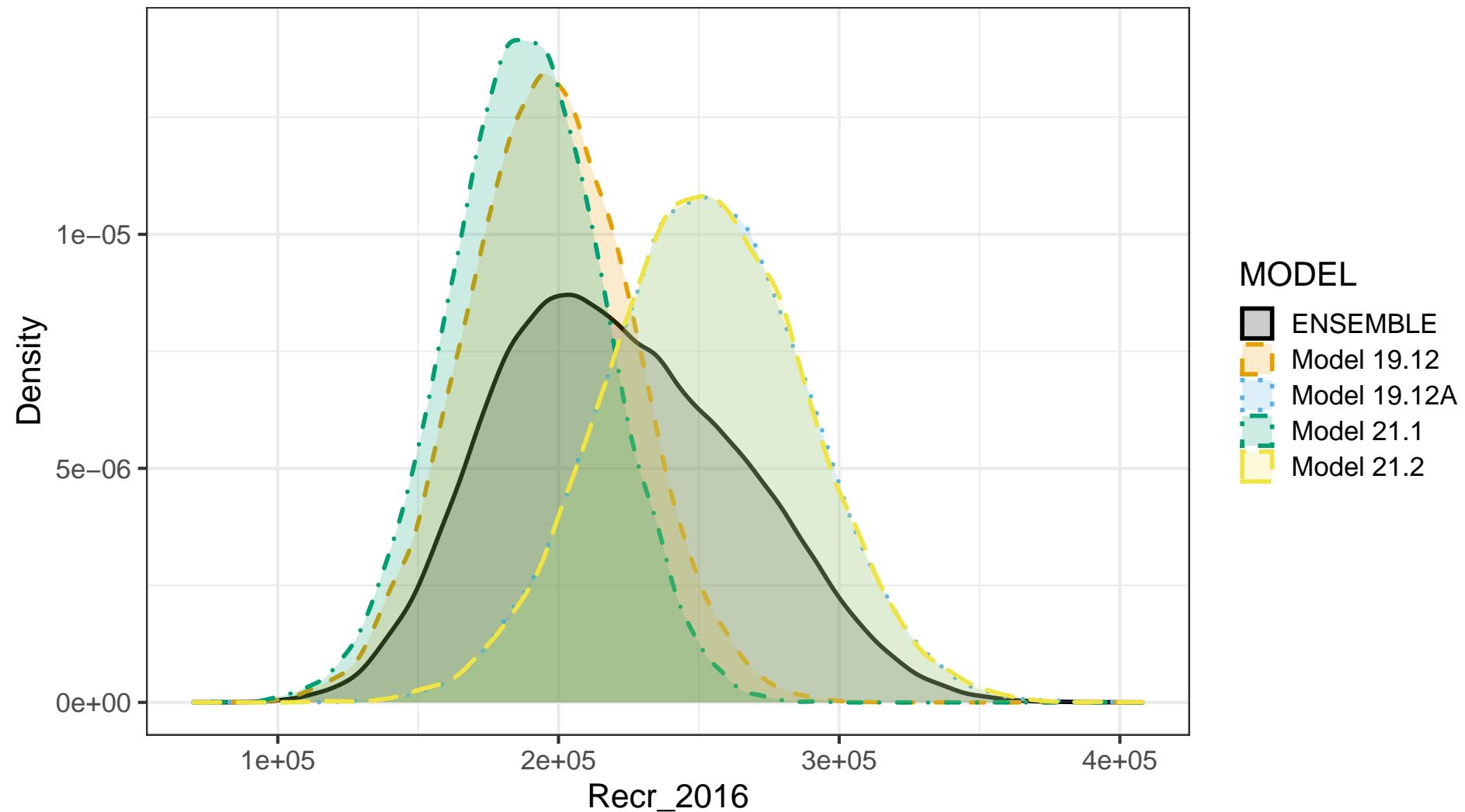
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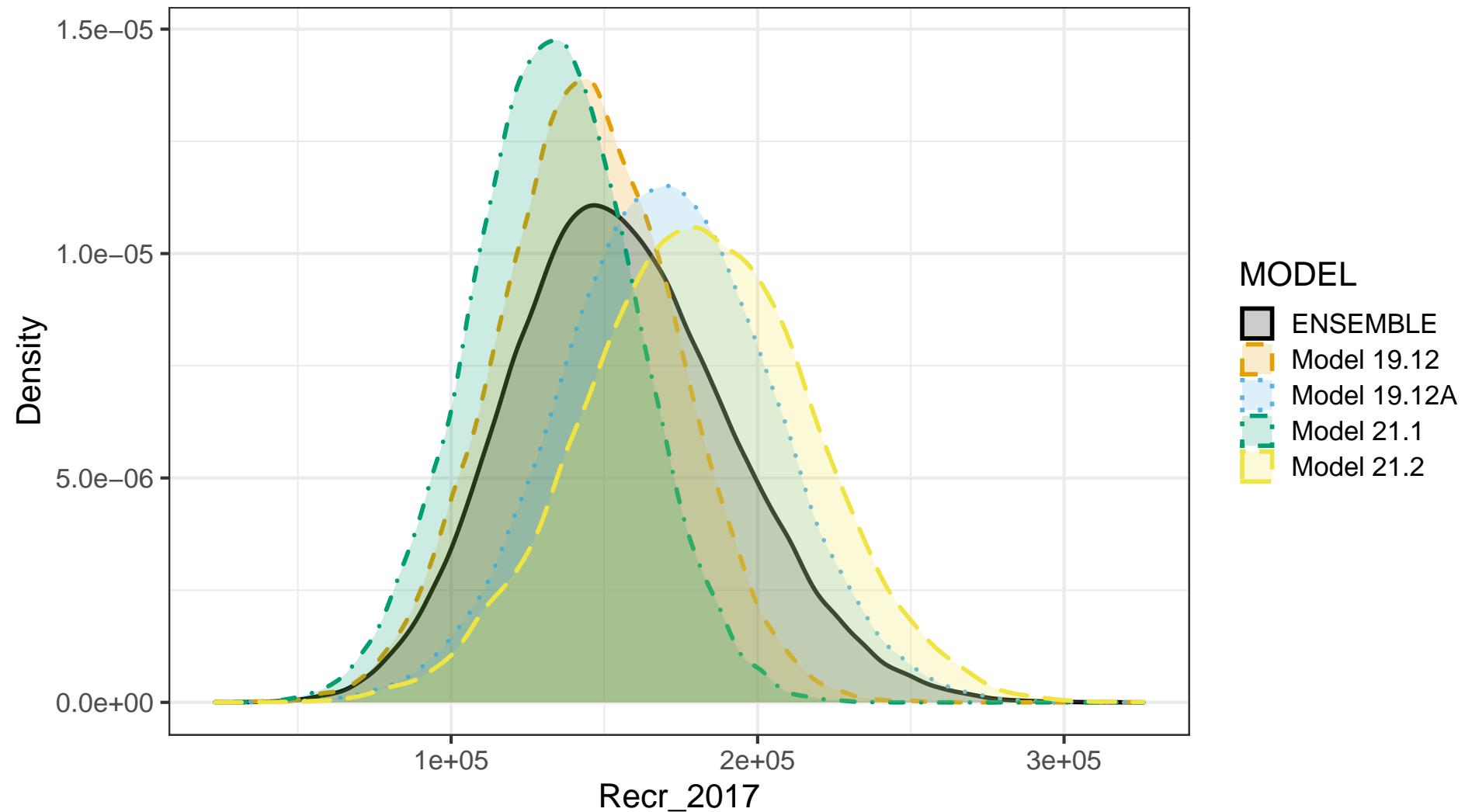
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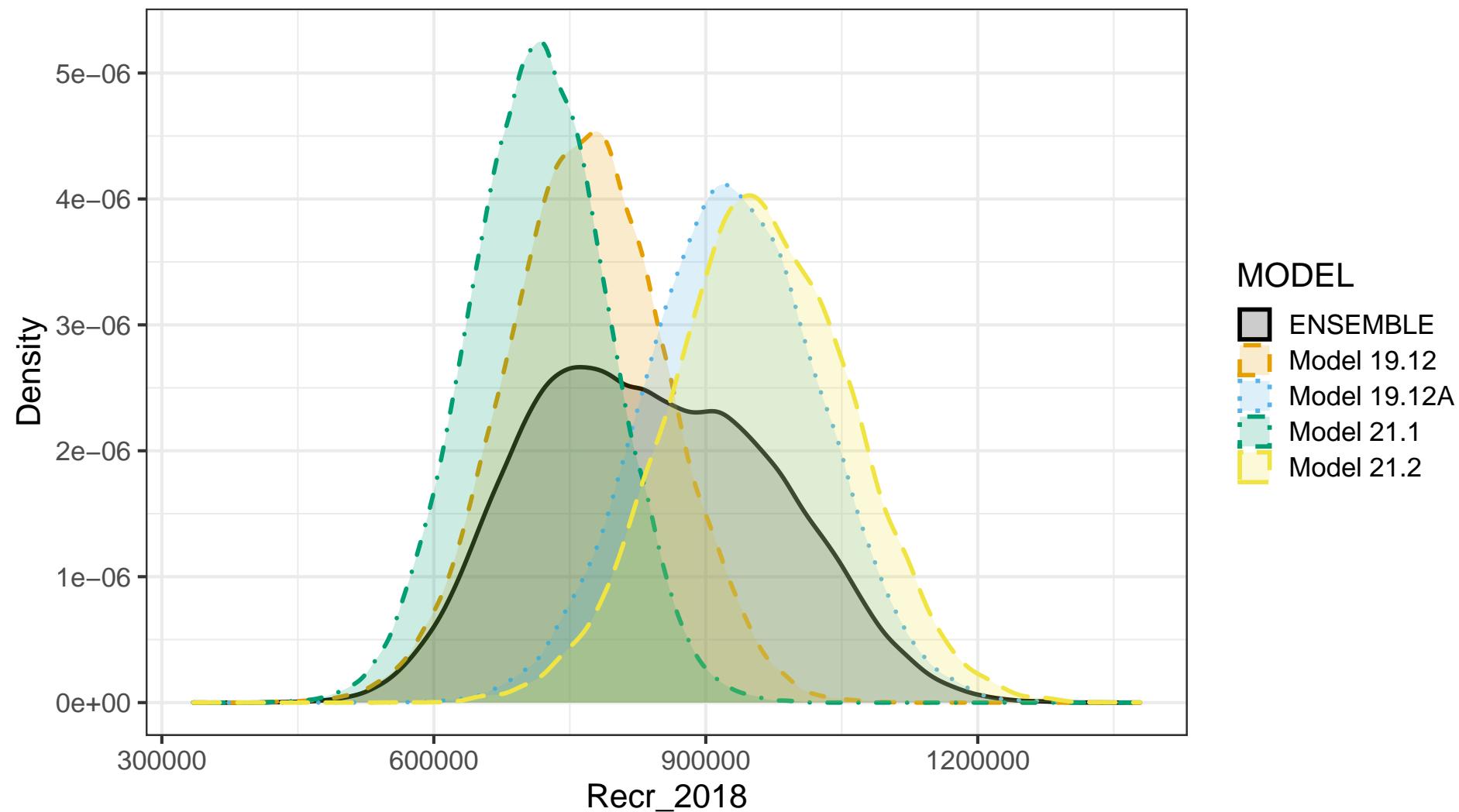
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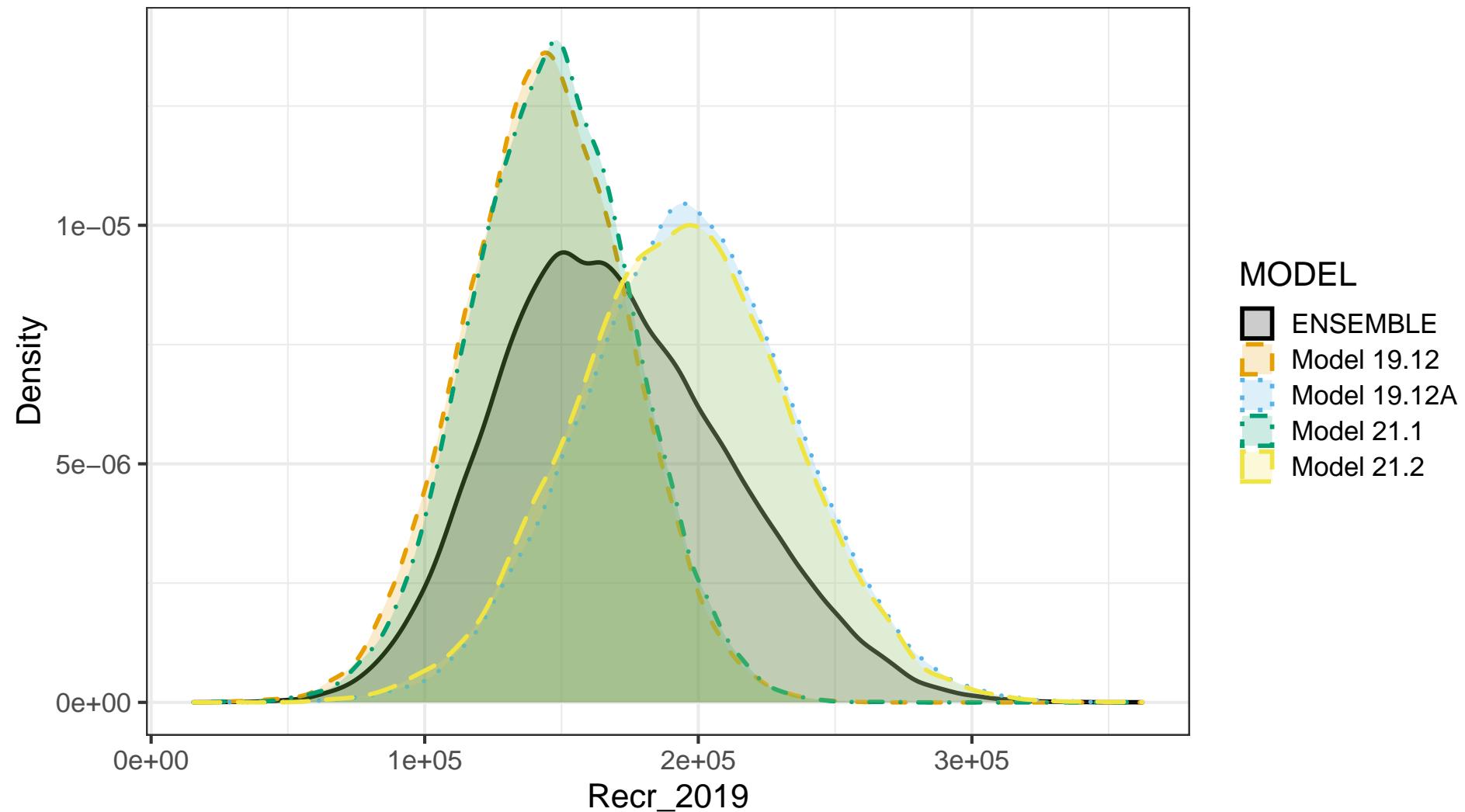
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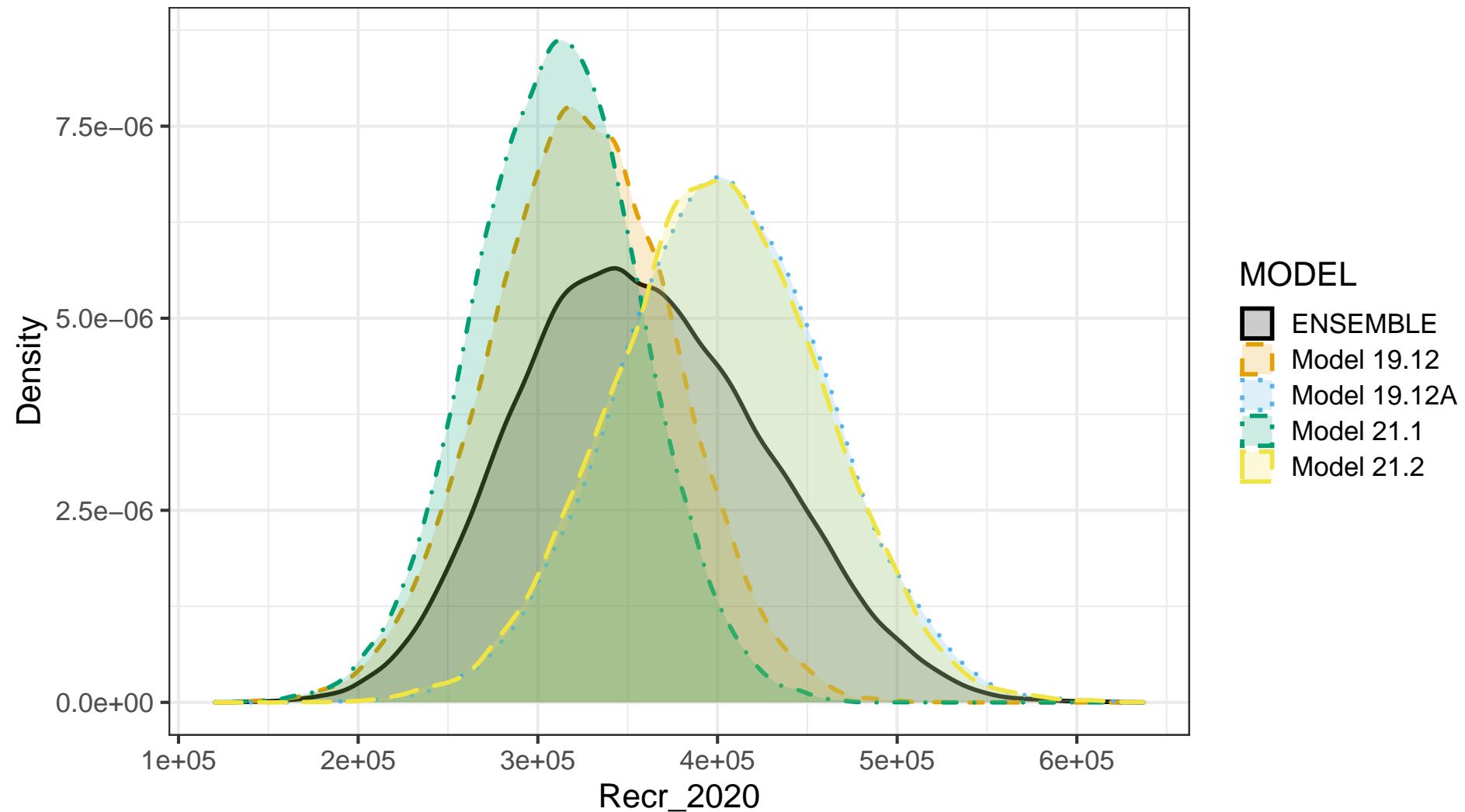
Recr_2018



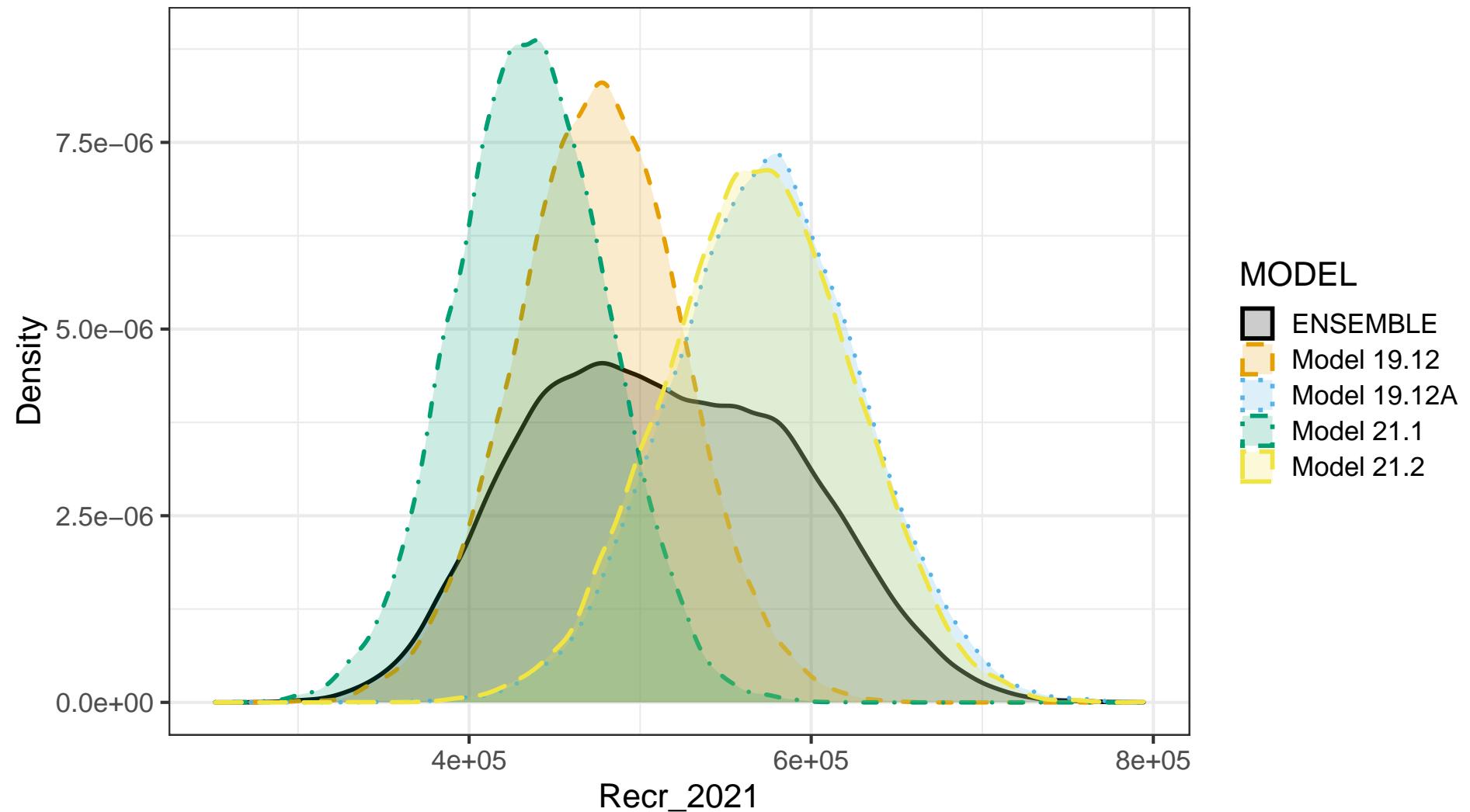
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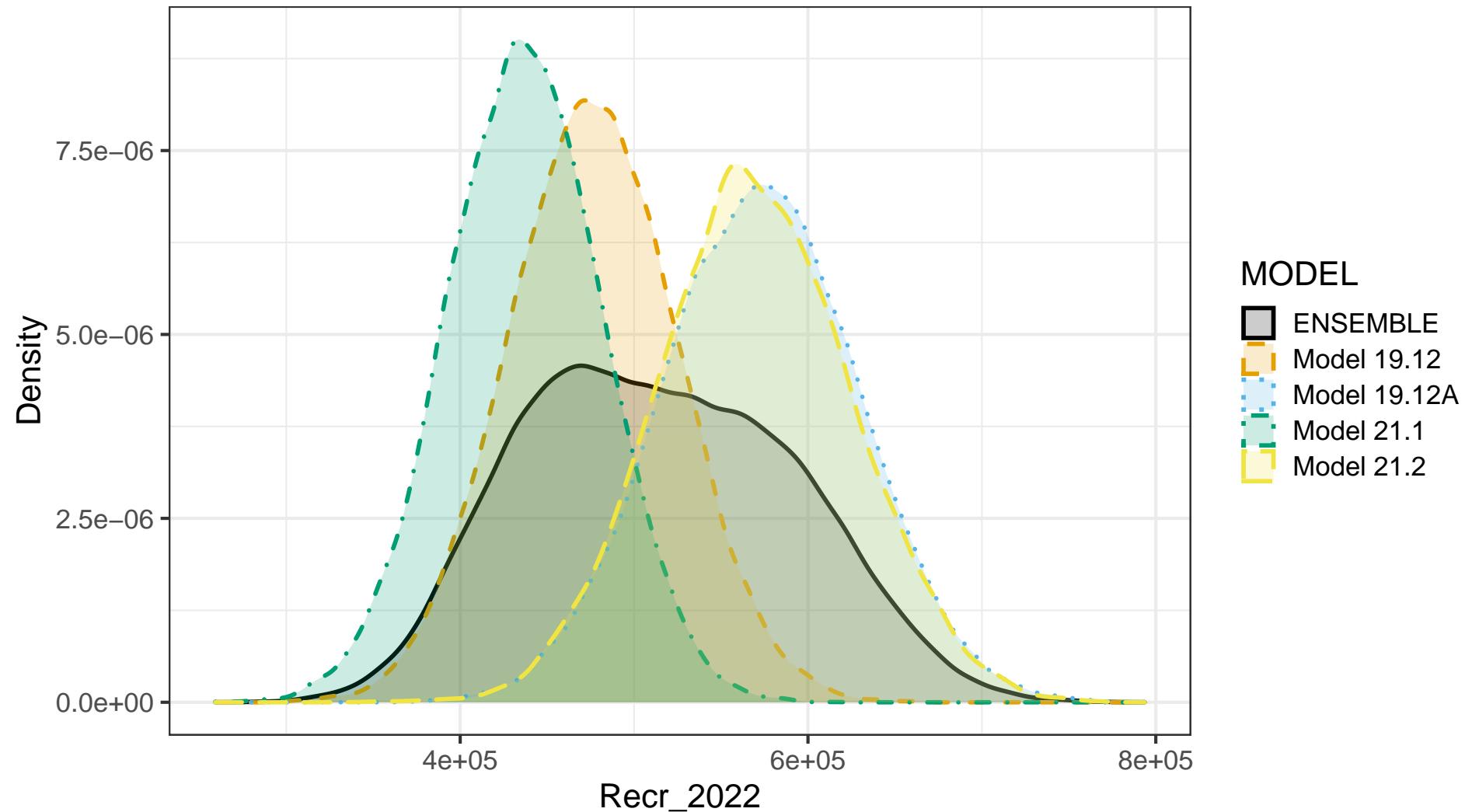
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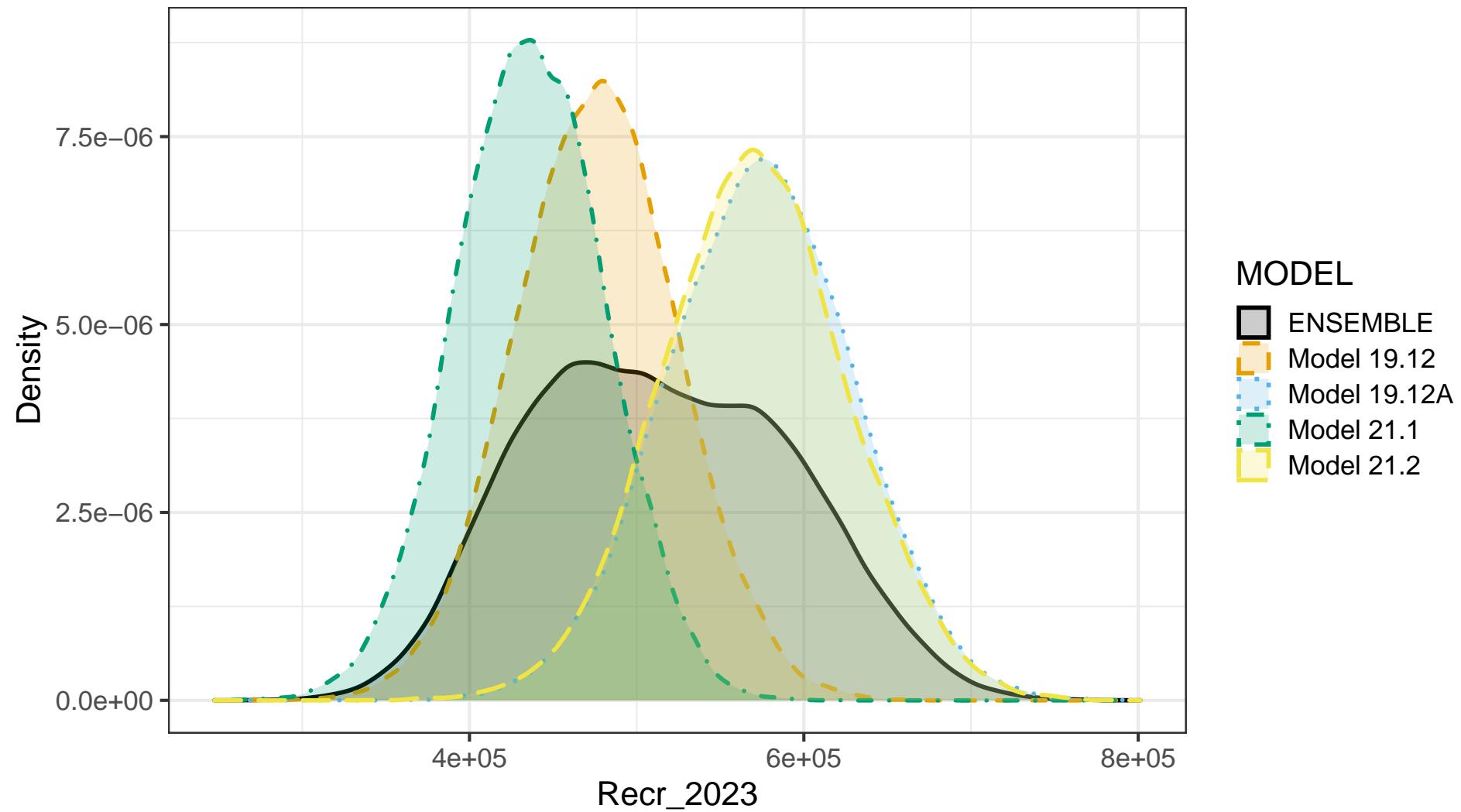
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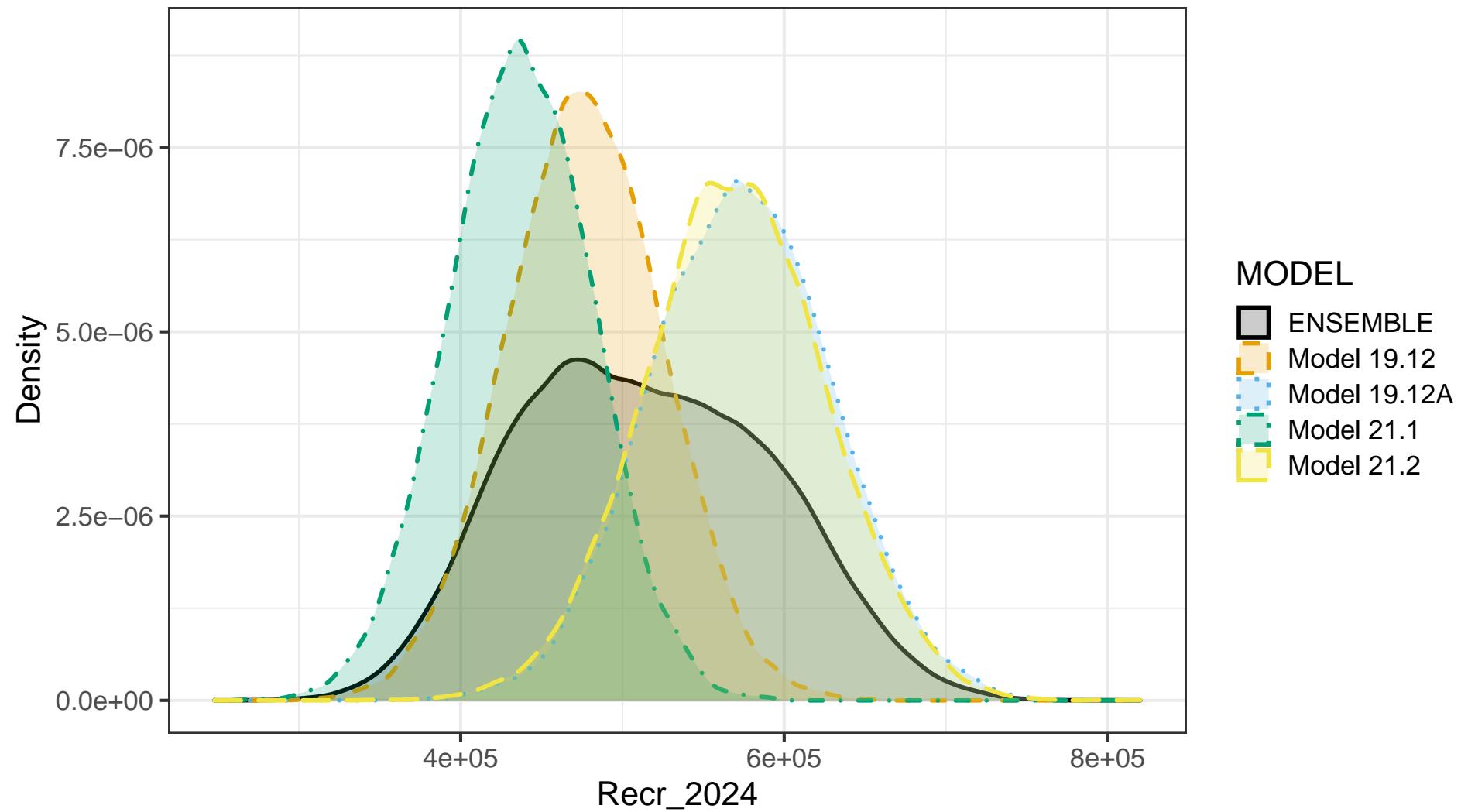
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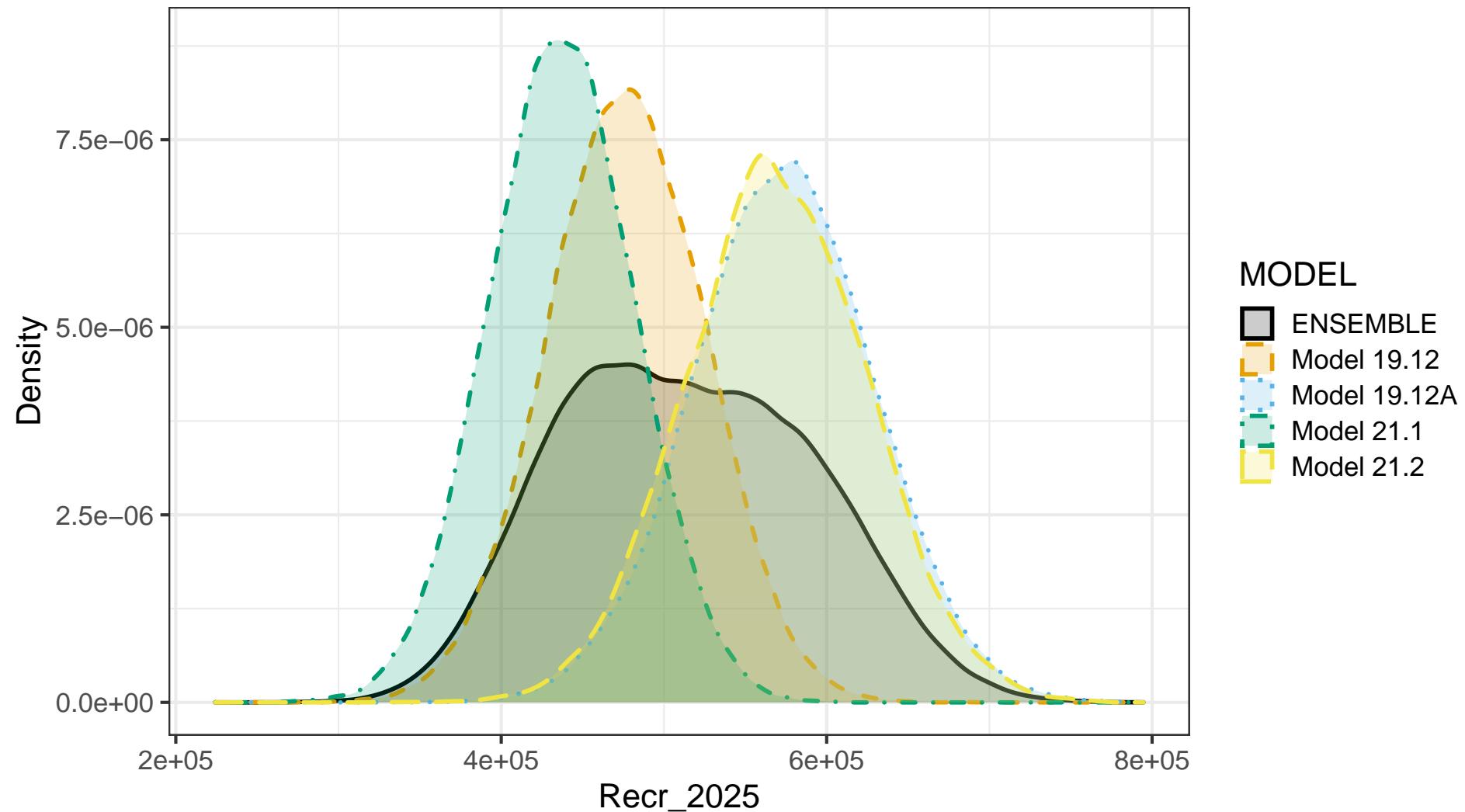
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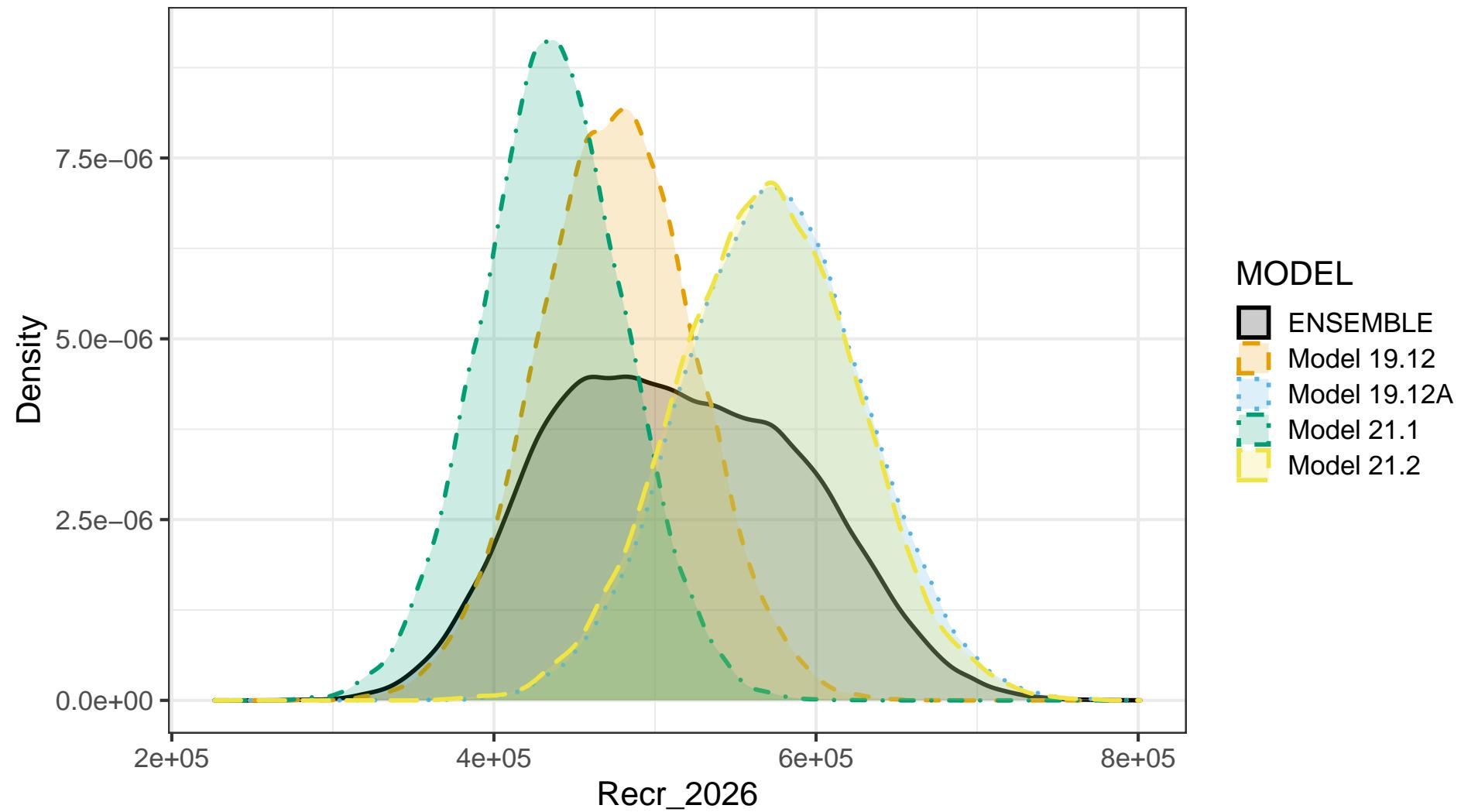
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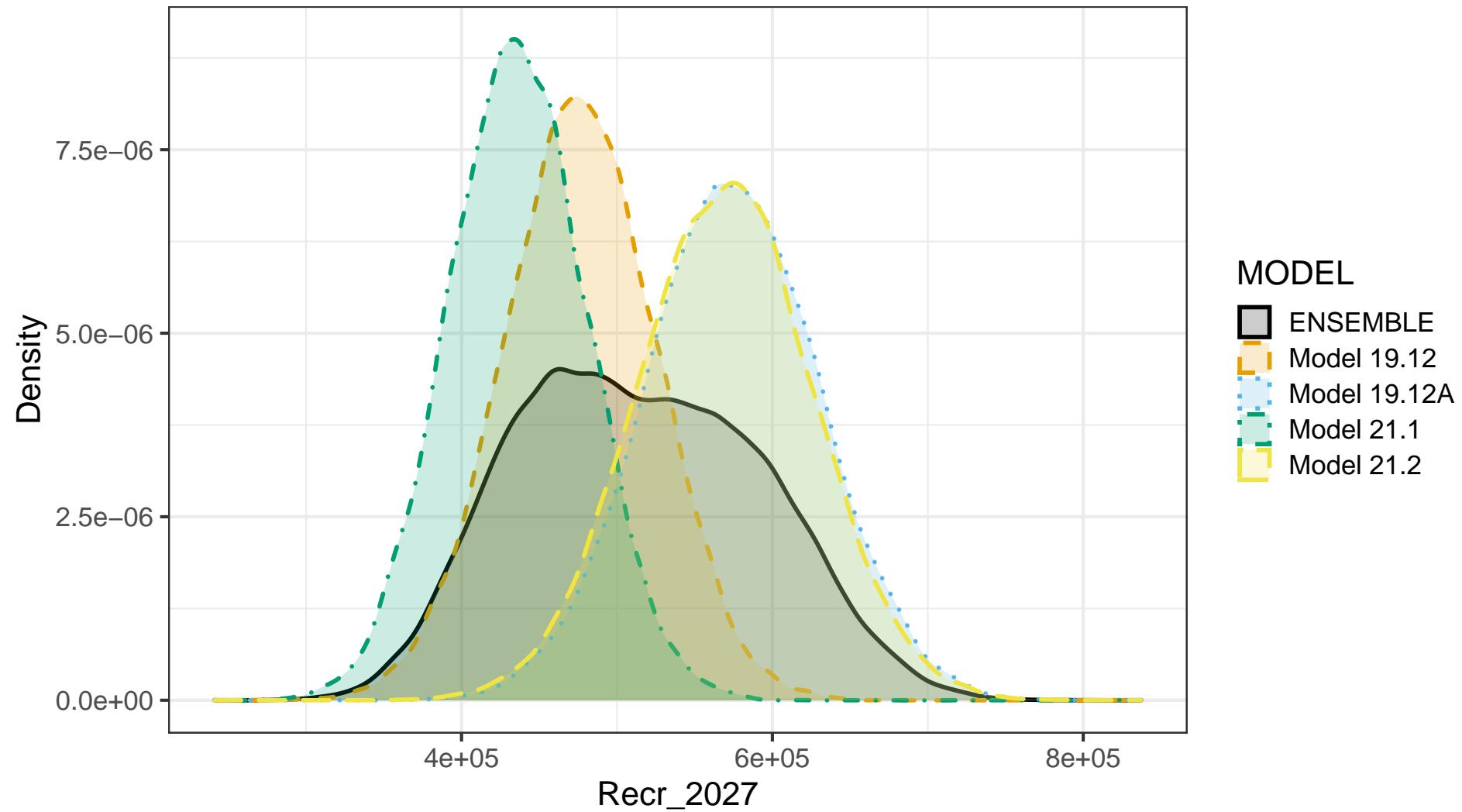
Recr_2025



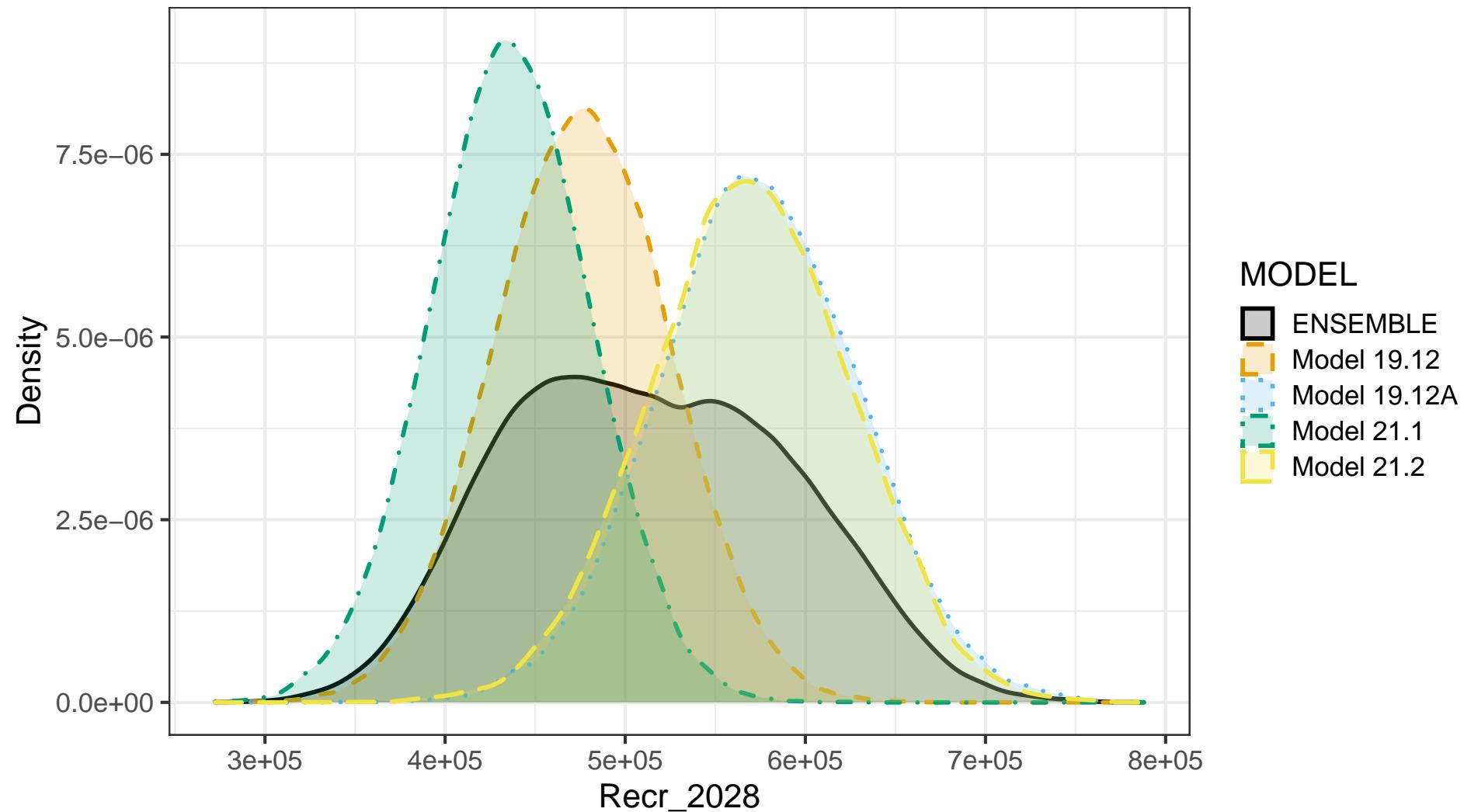
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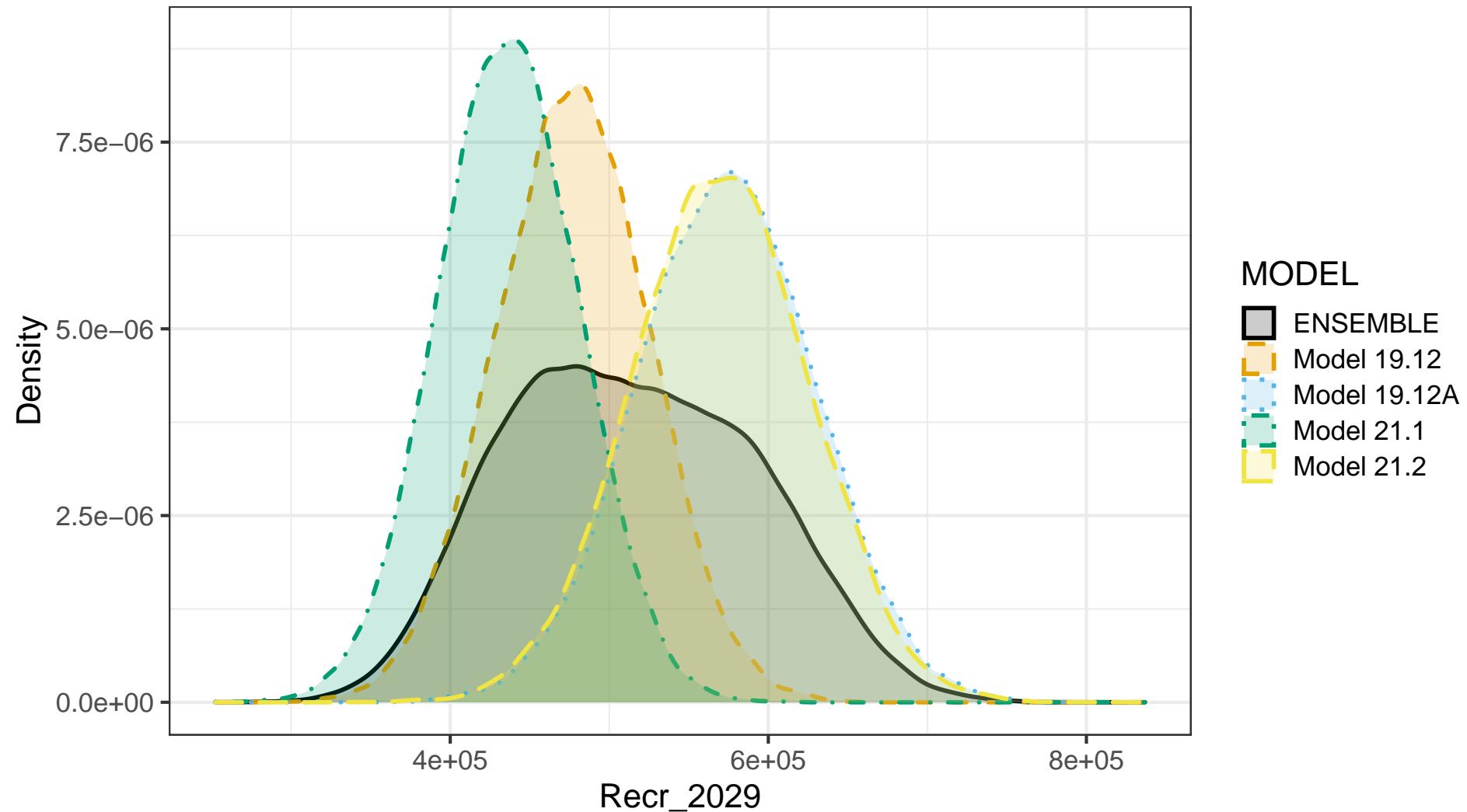
Recr_2027



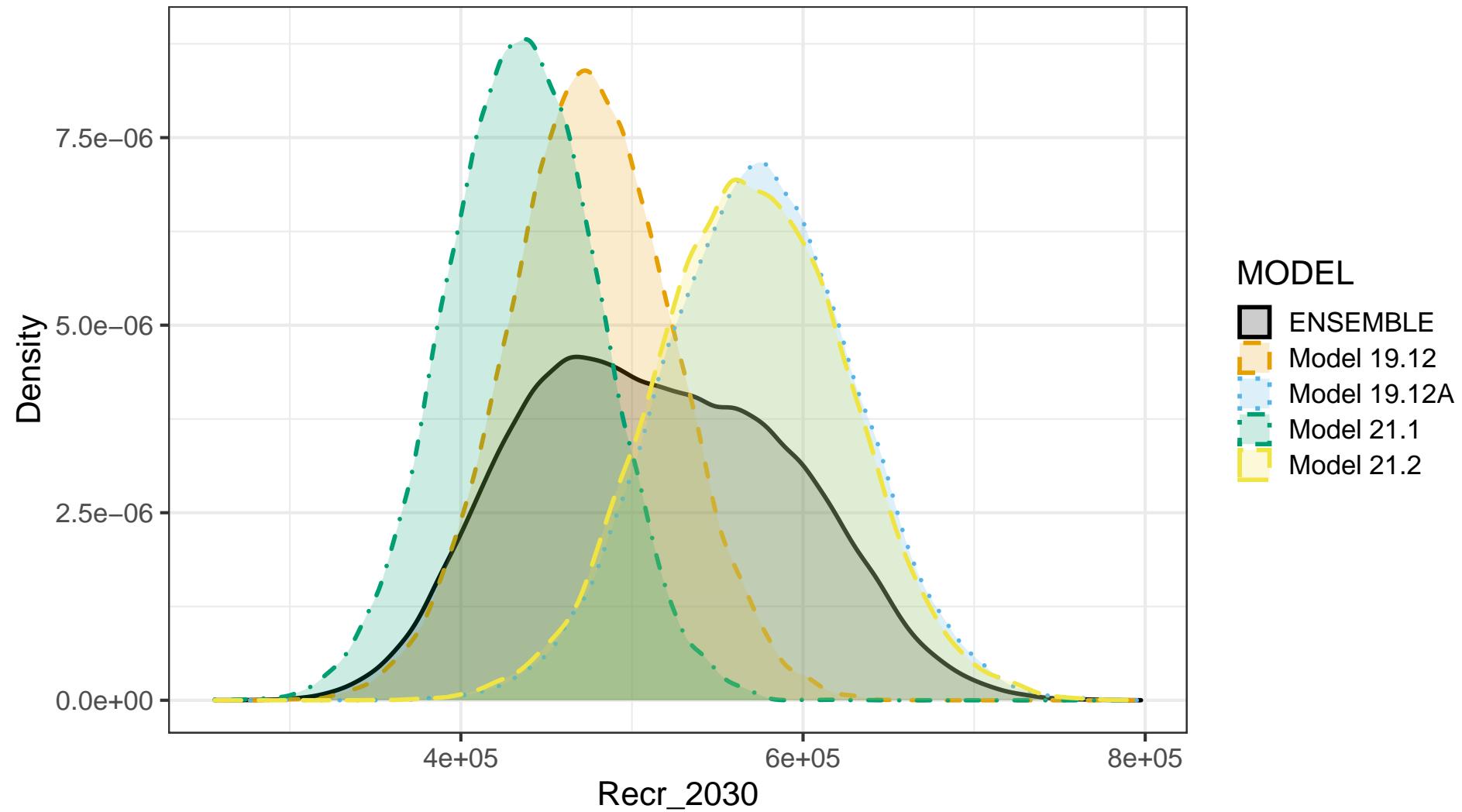
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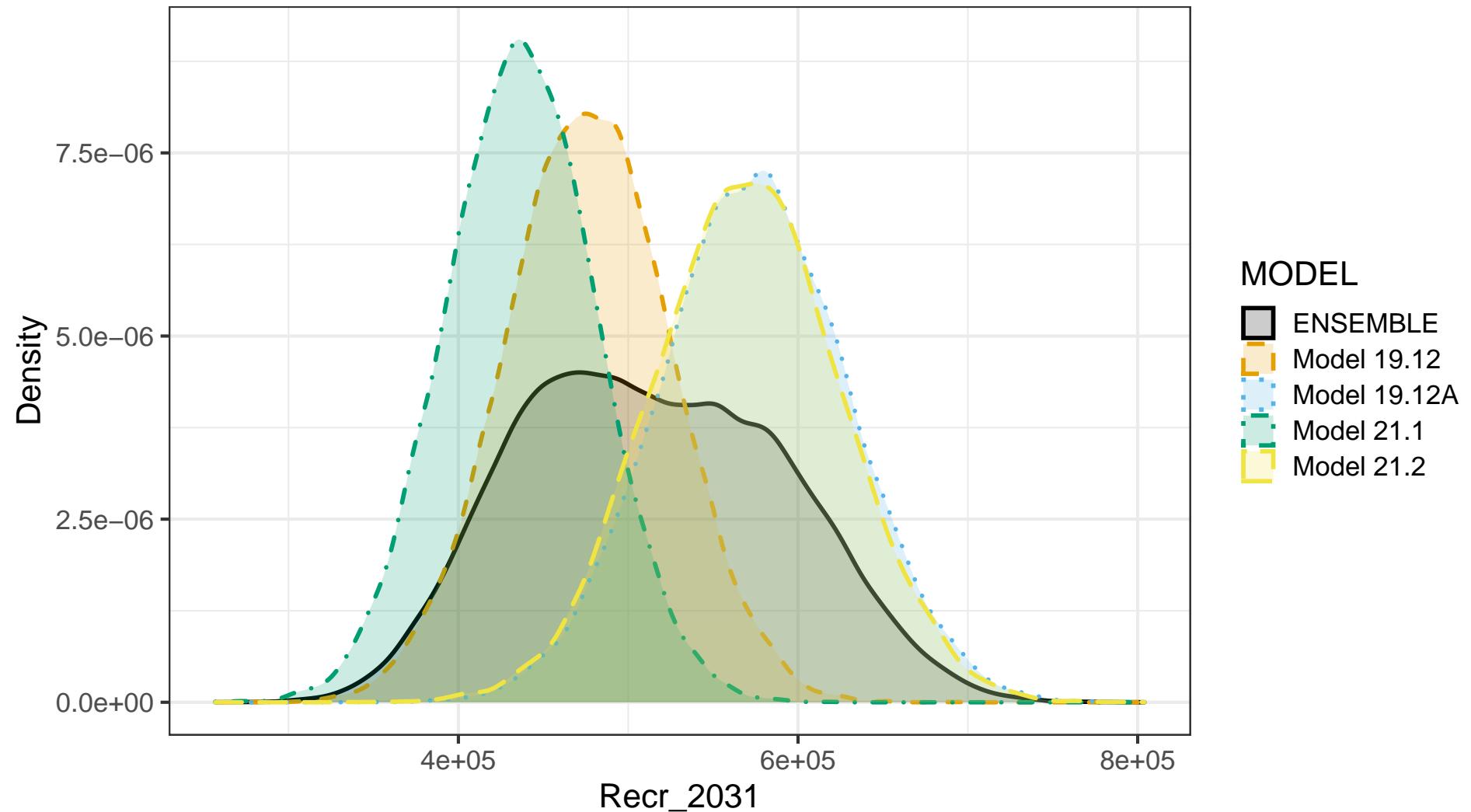
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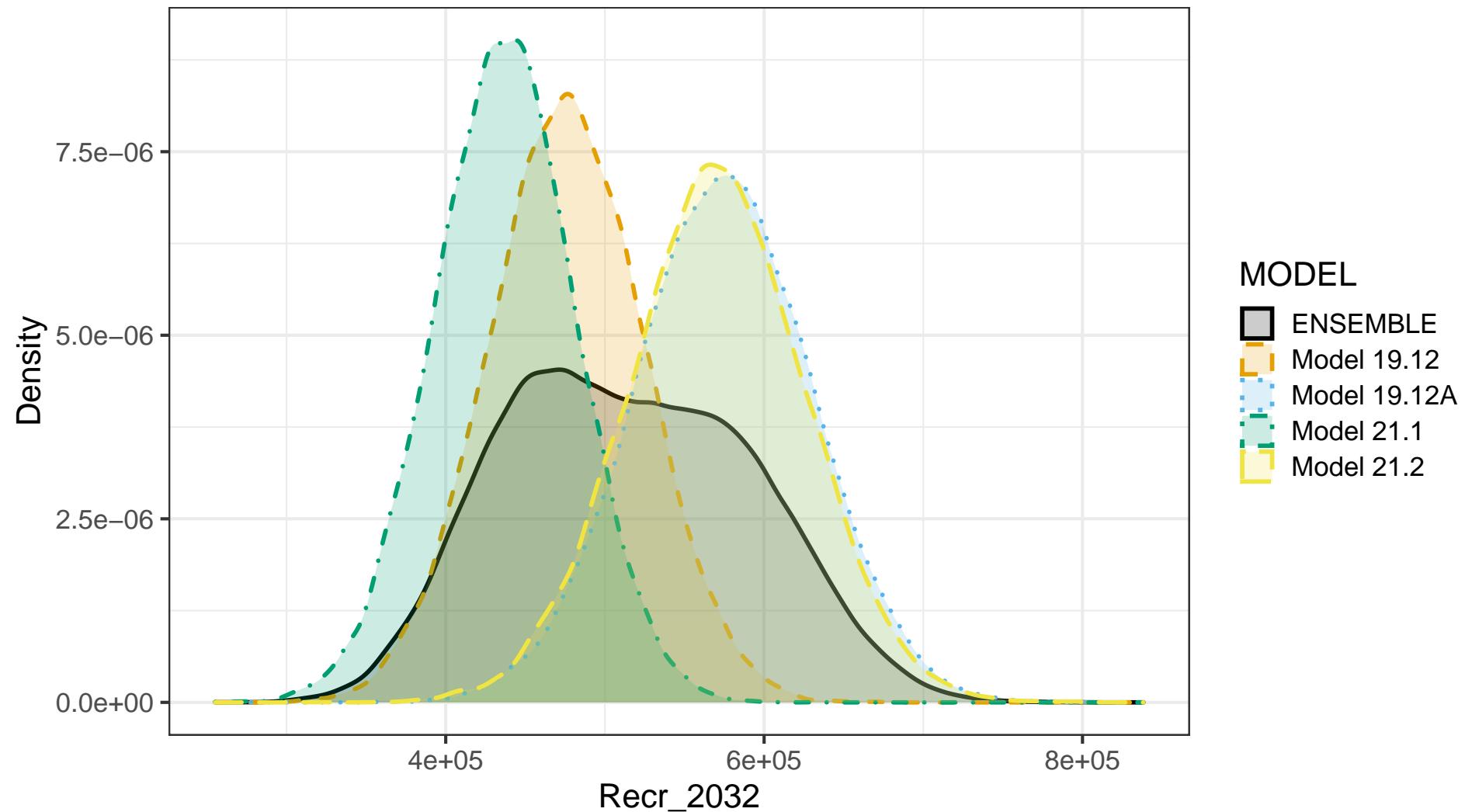
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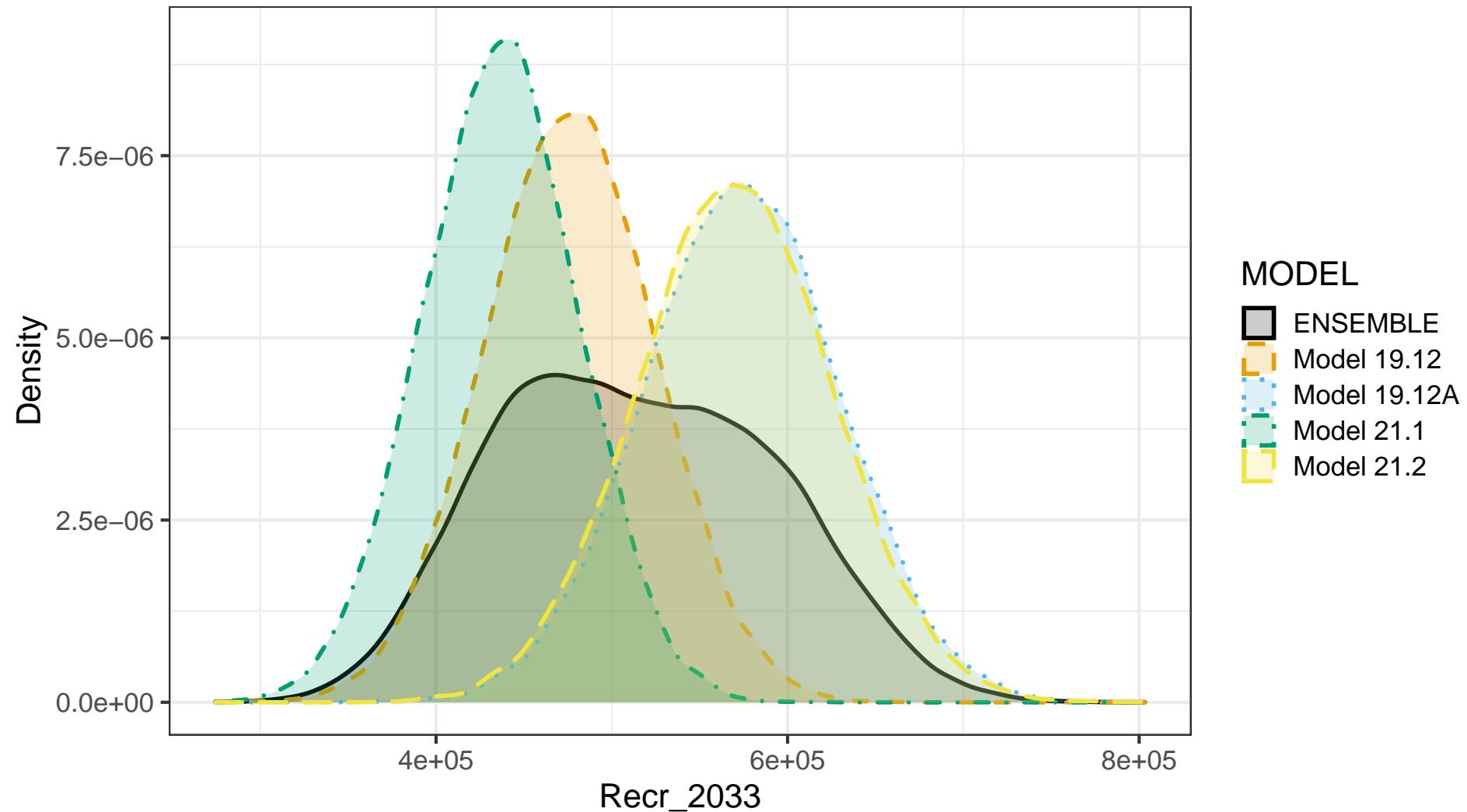
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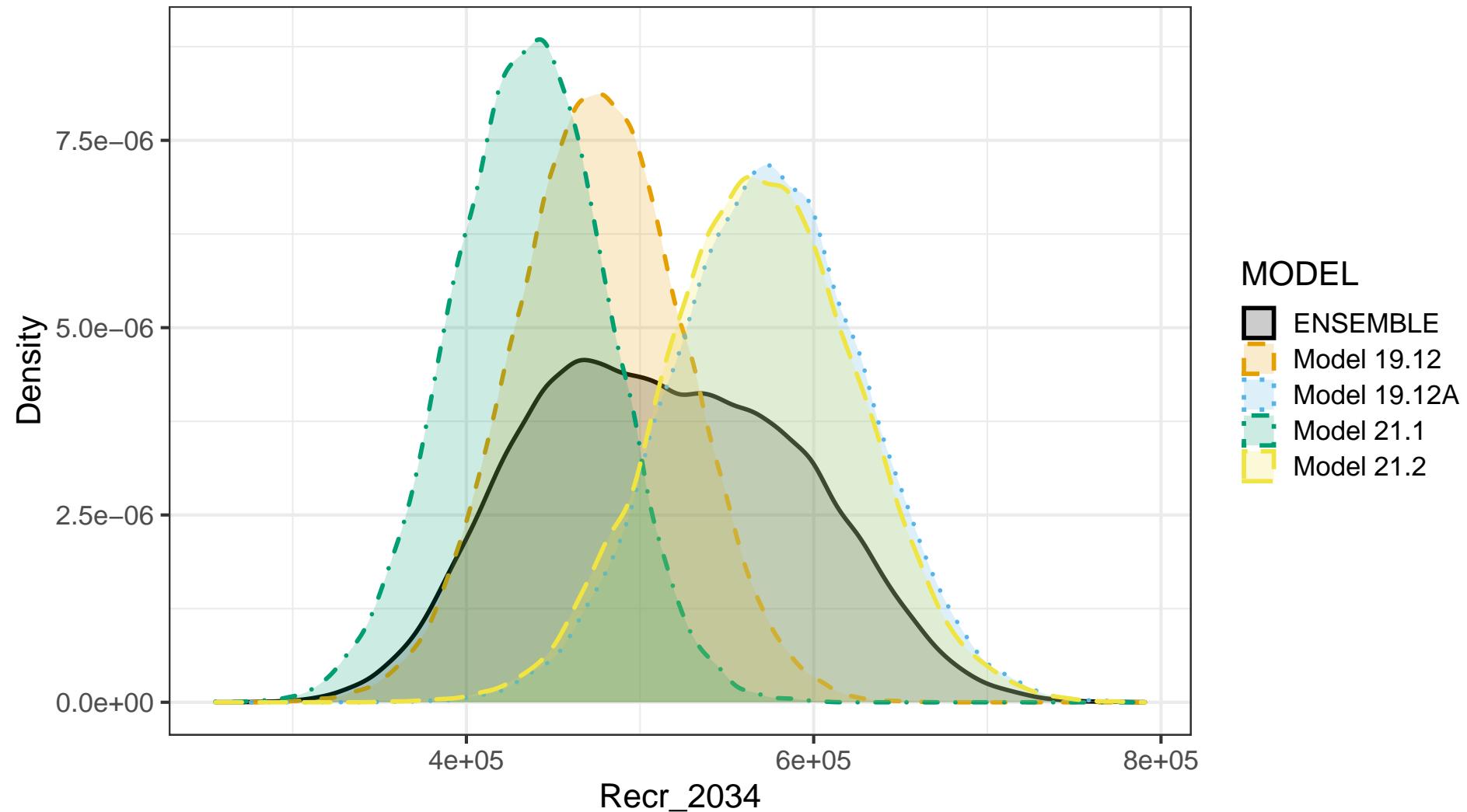
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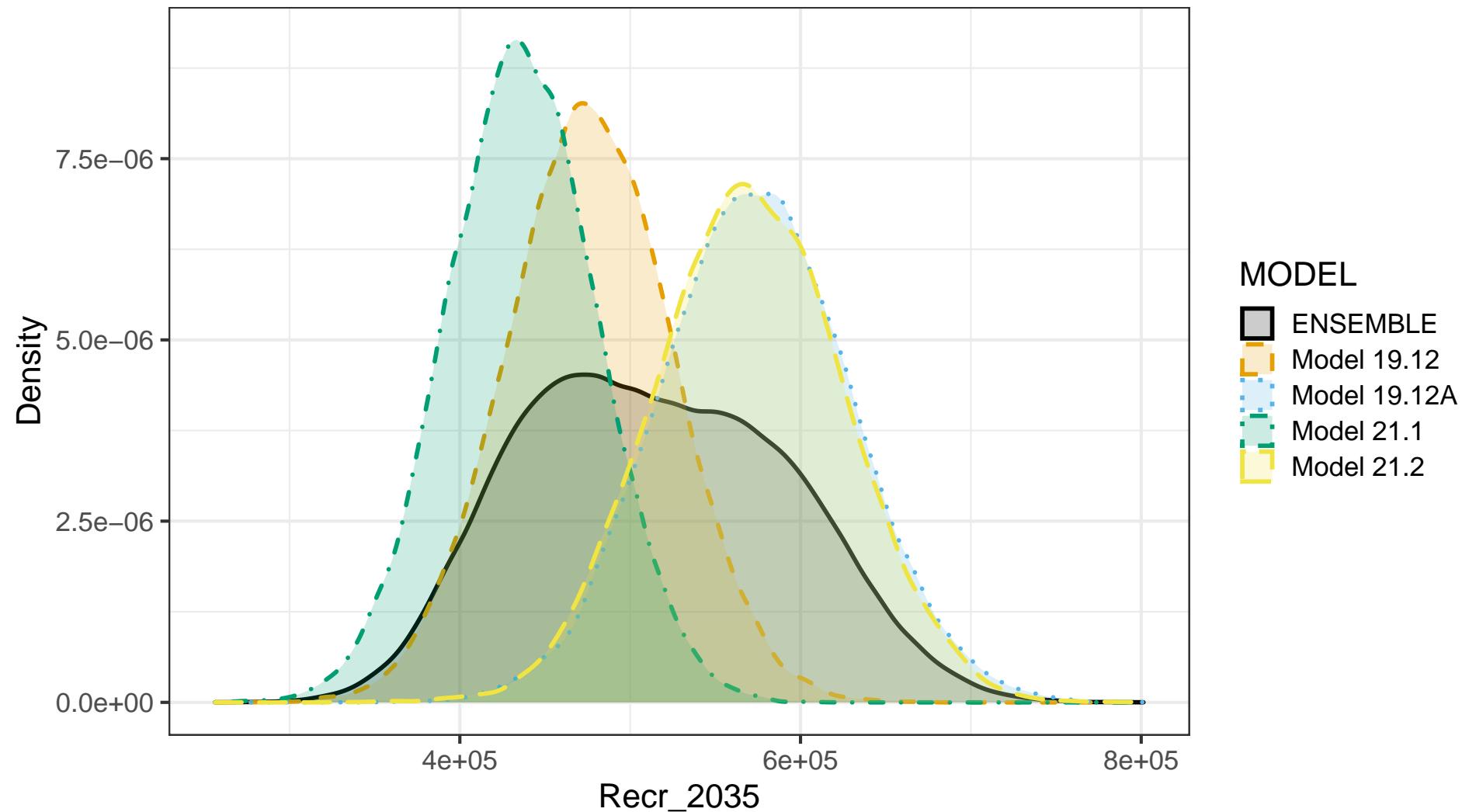
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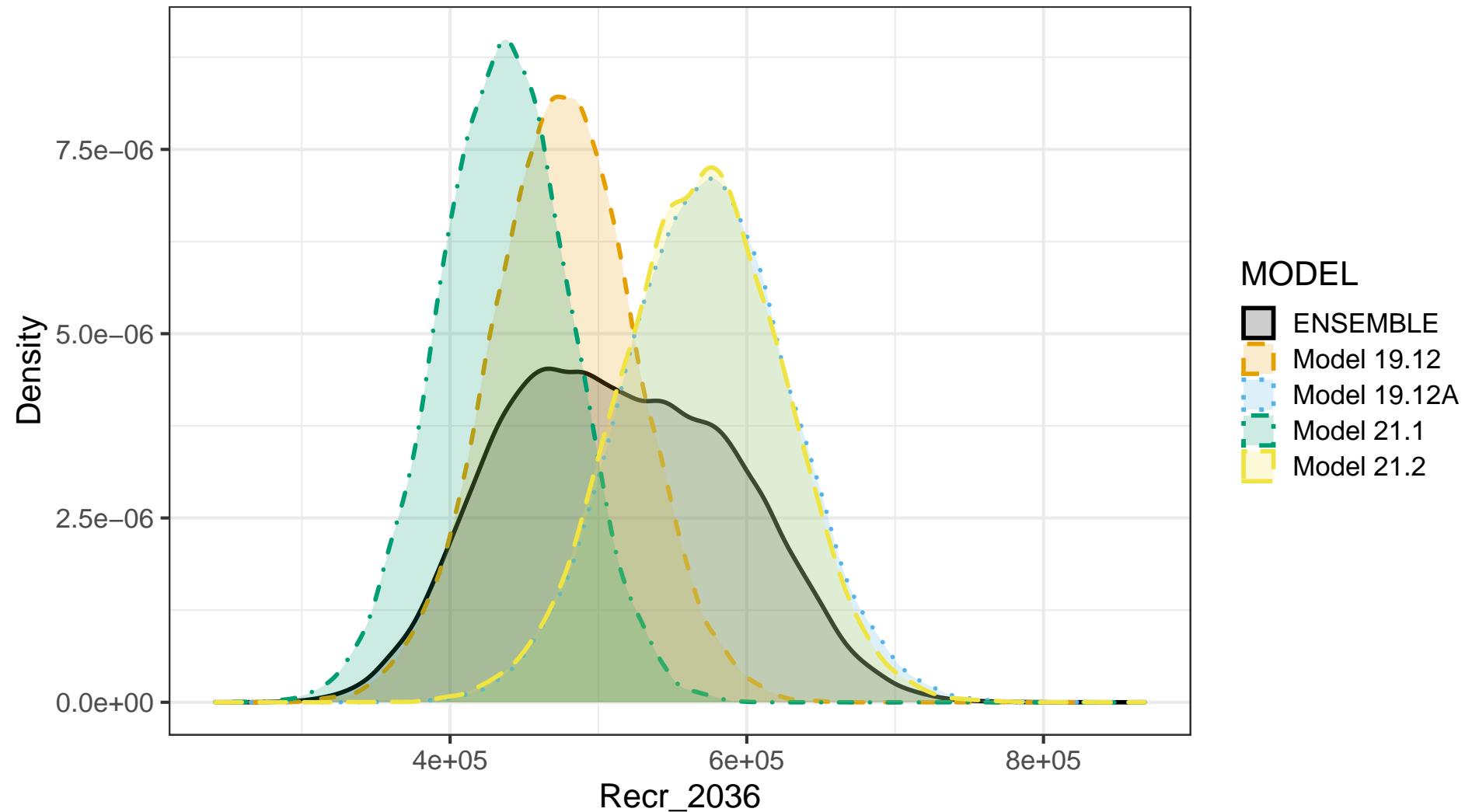
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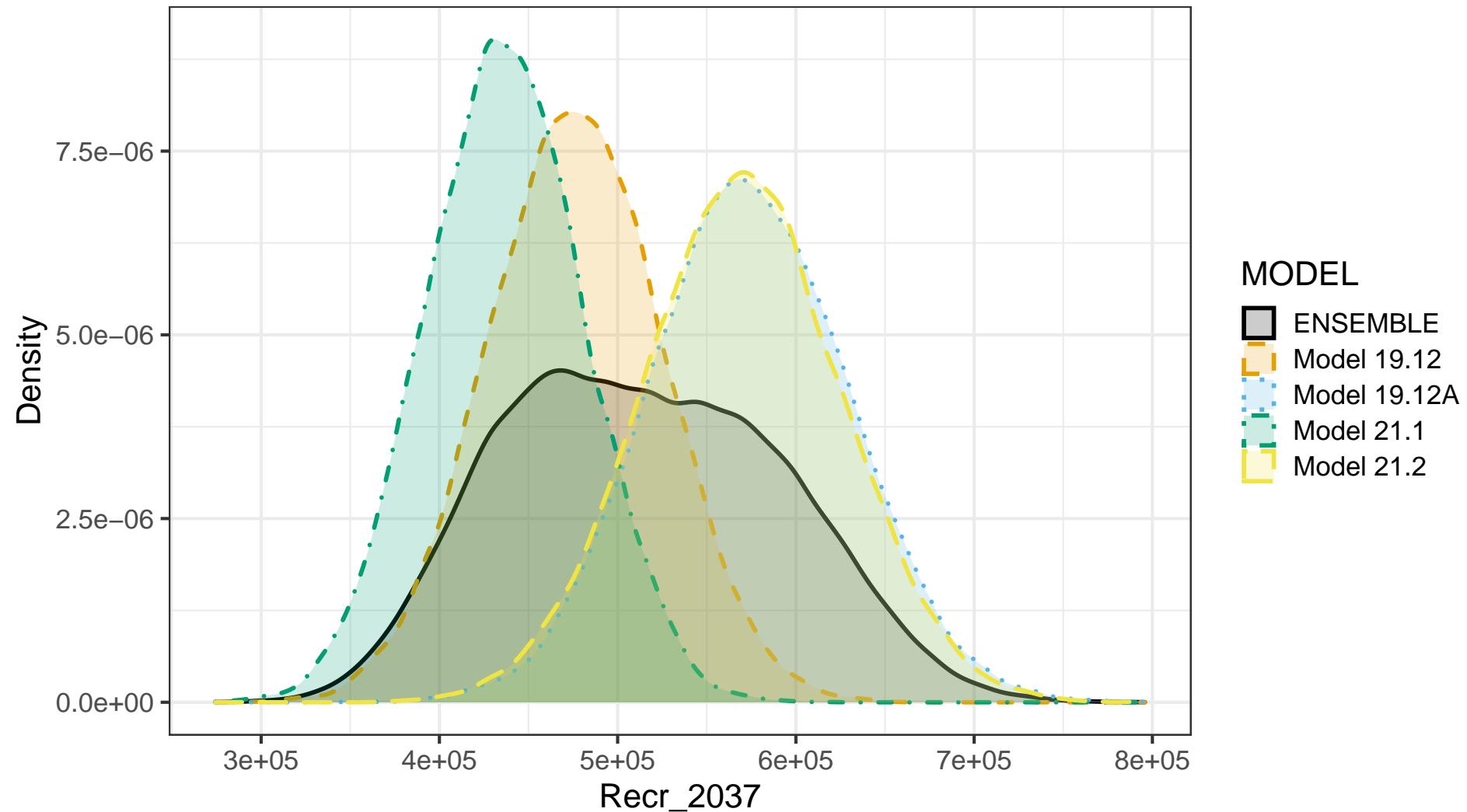
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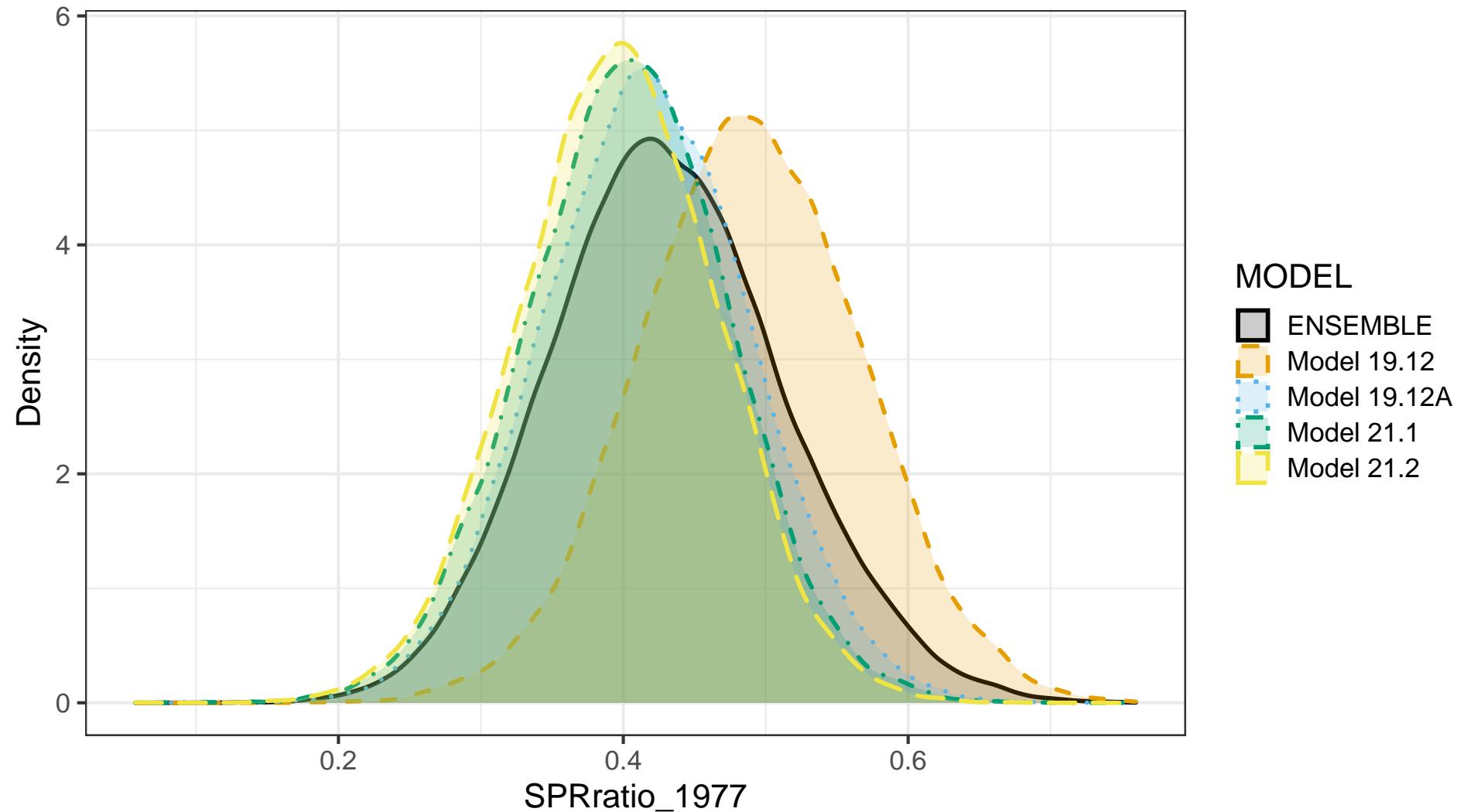
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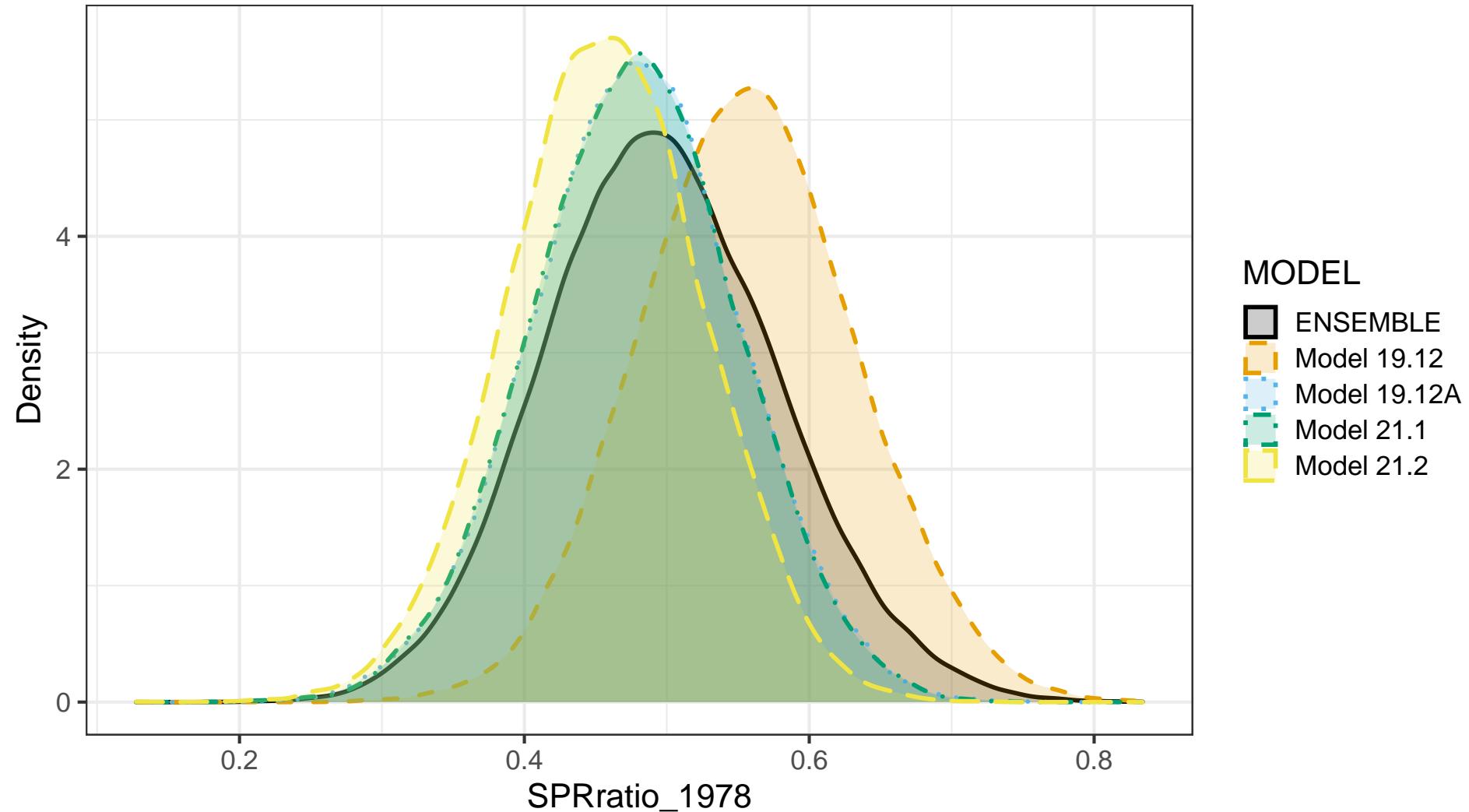
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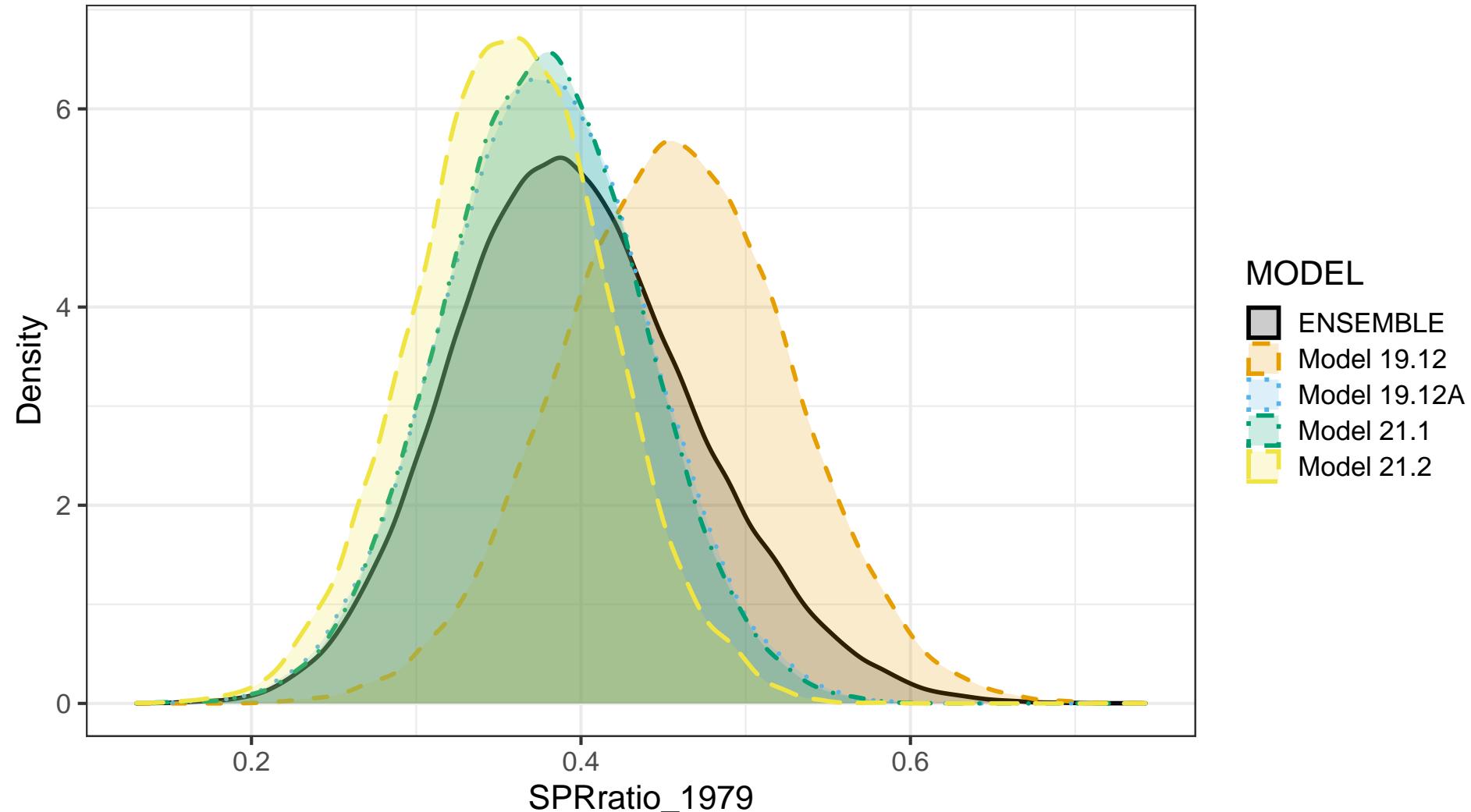
SPRratio_1977



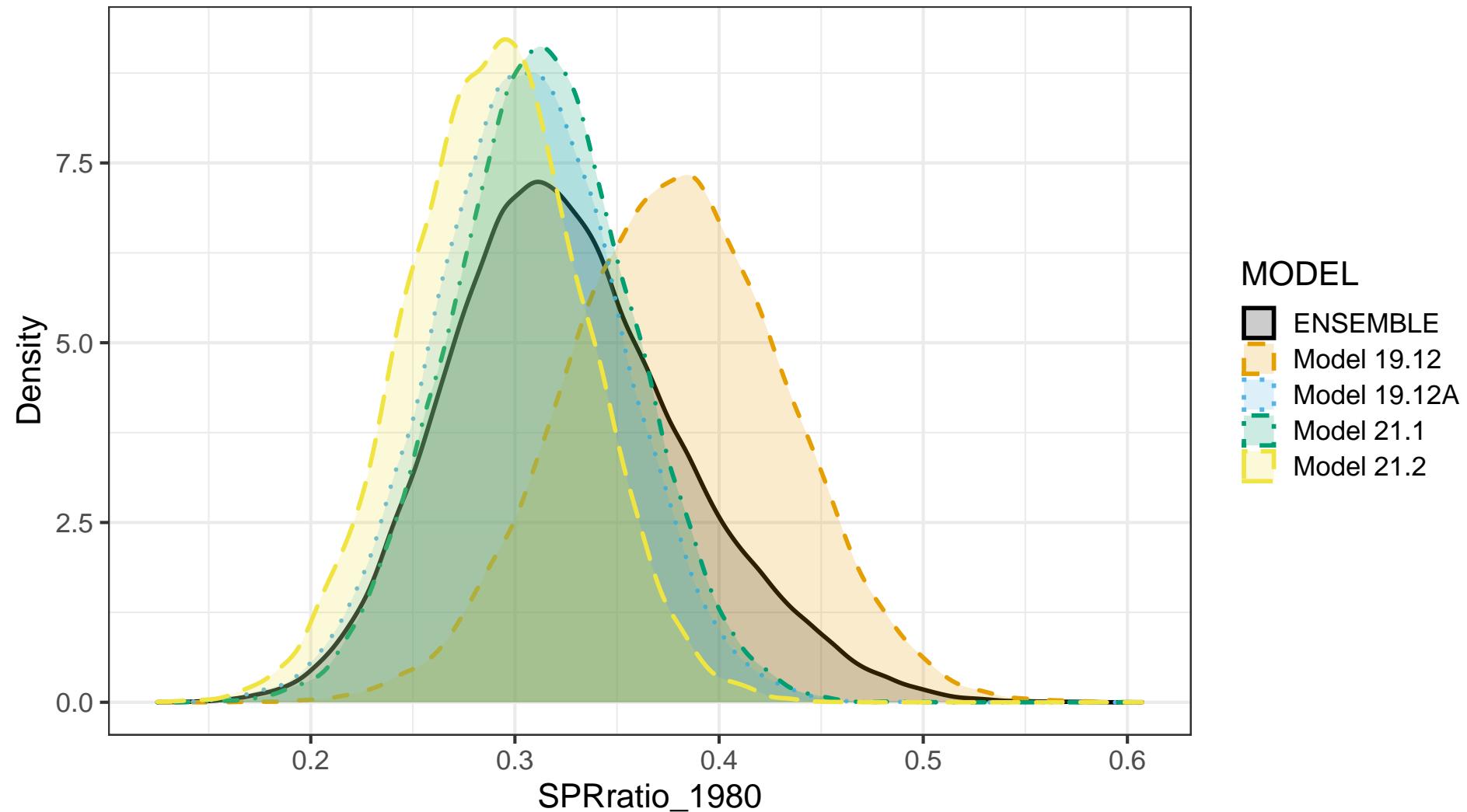
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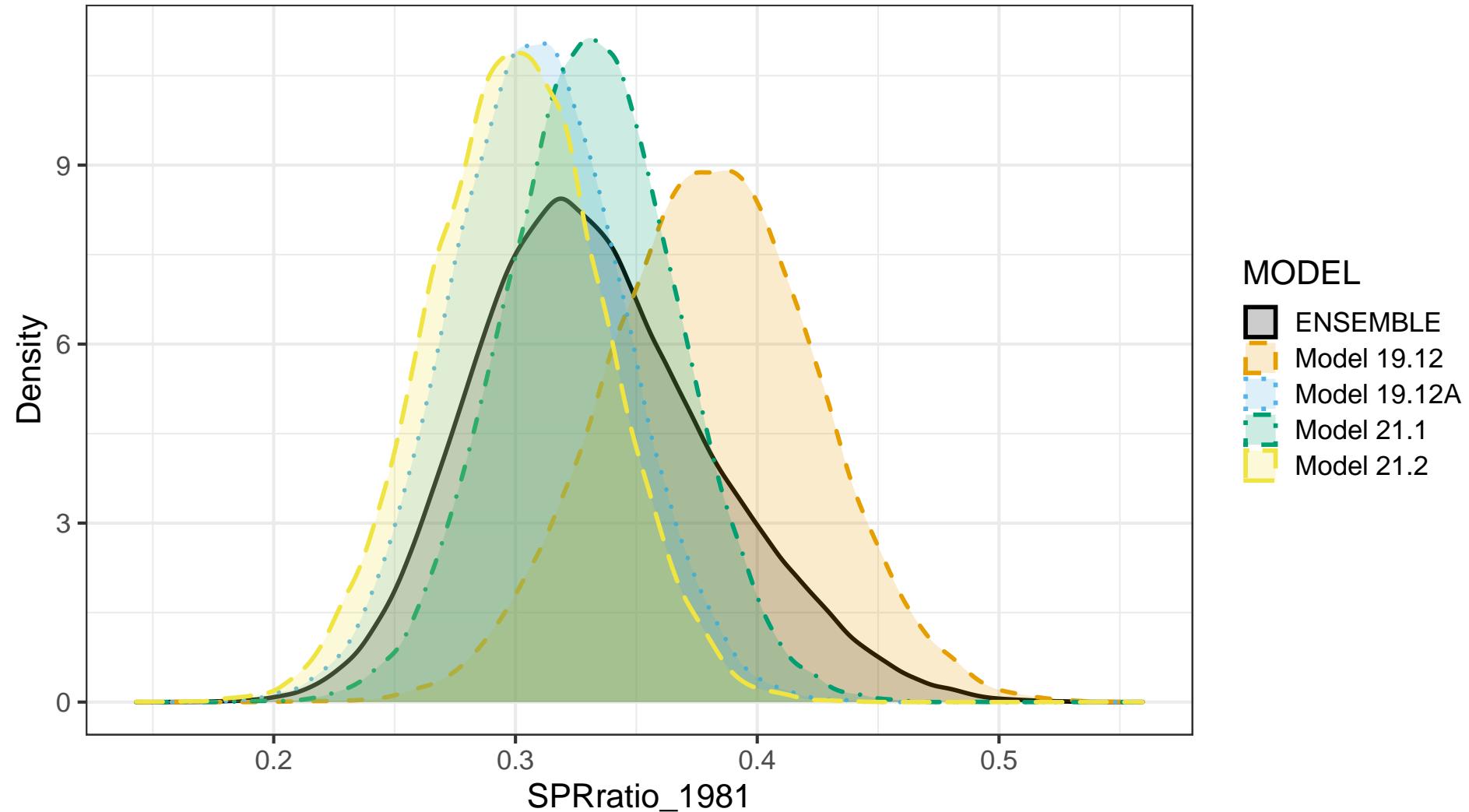
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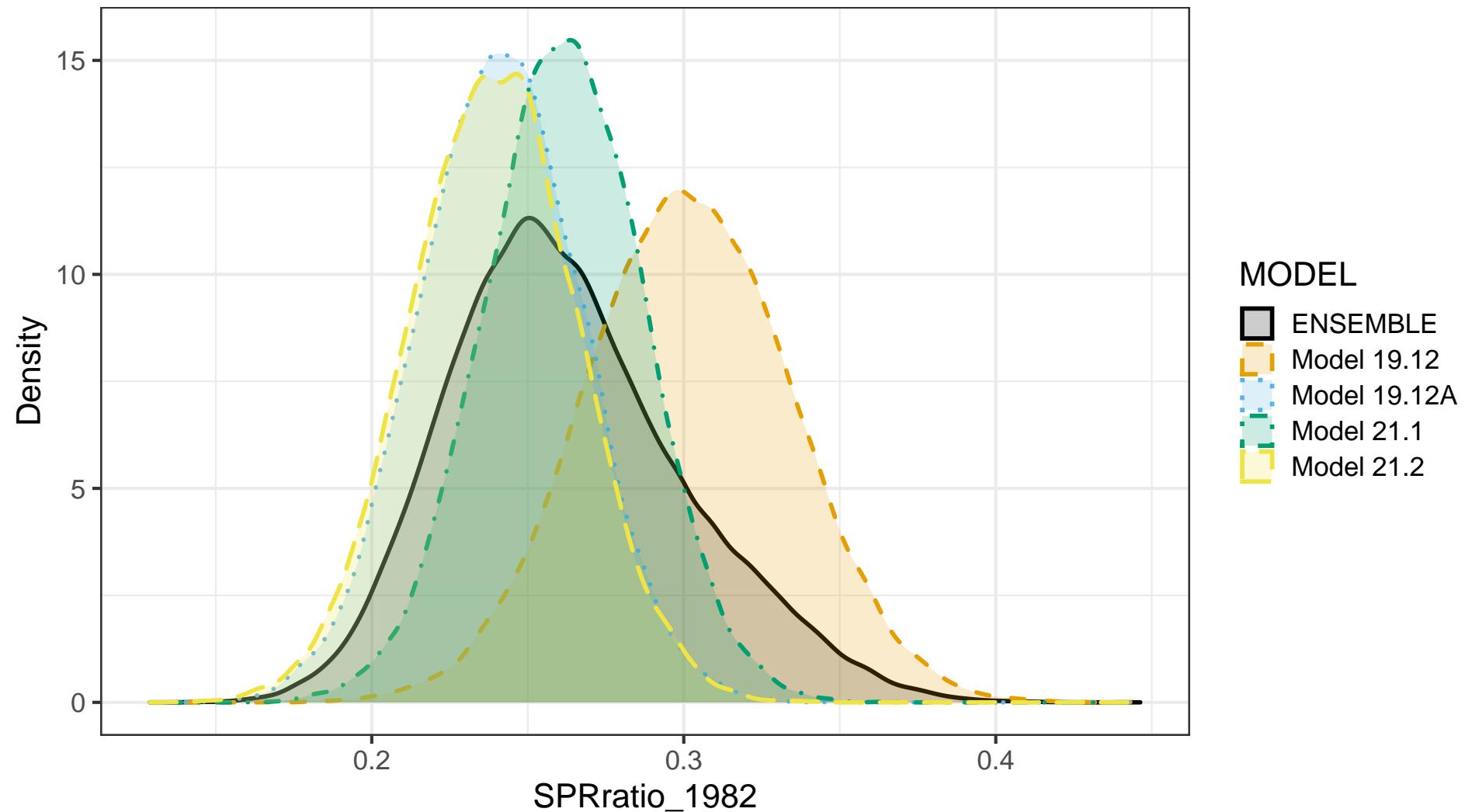
SPRratio_1980



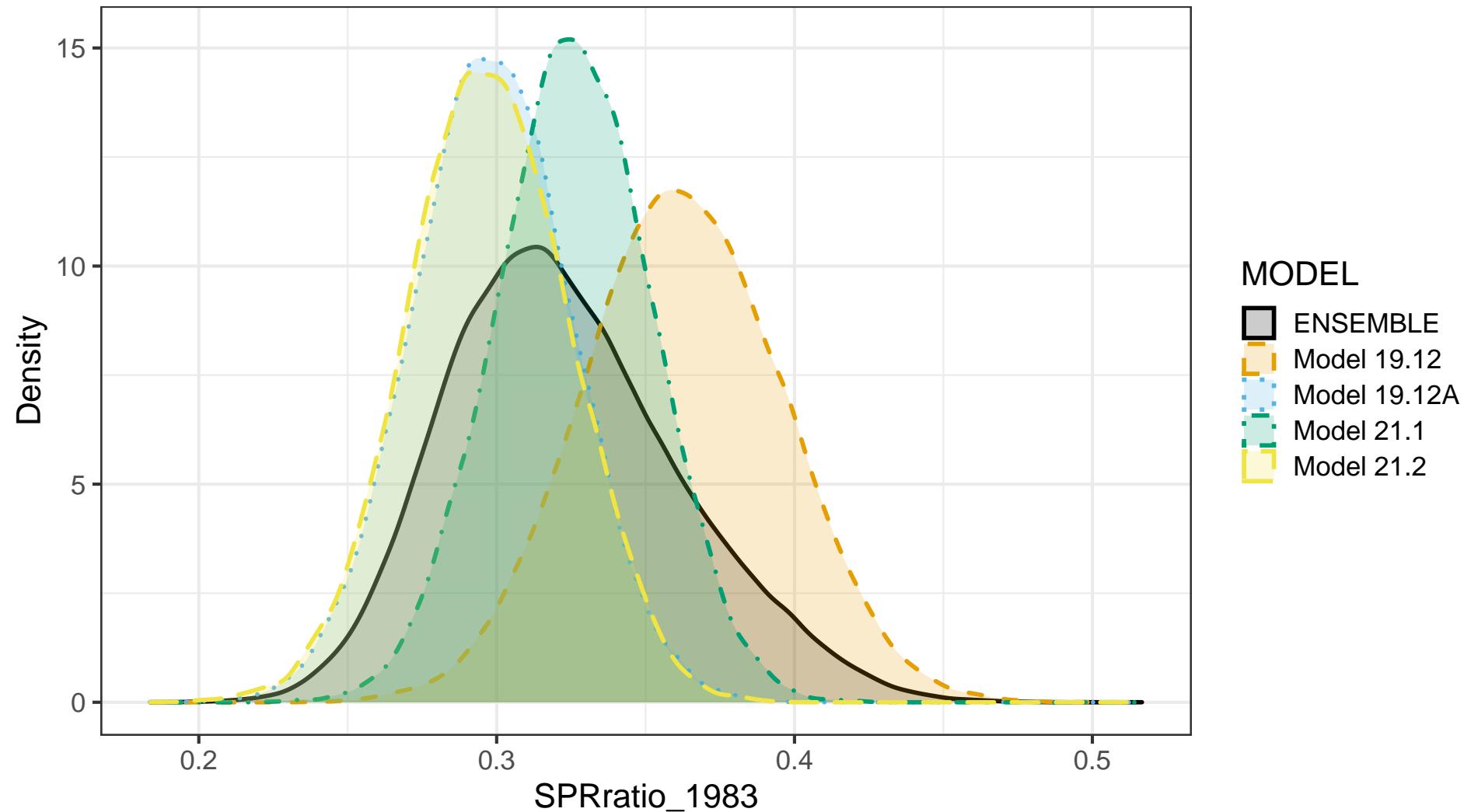
SPRratio_1981



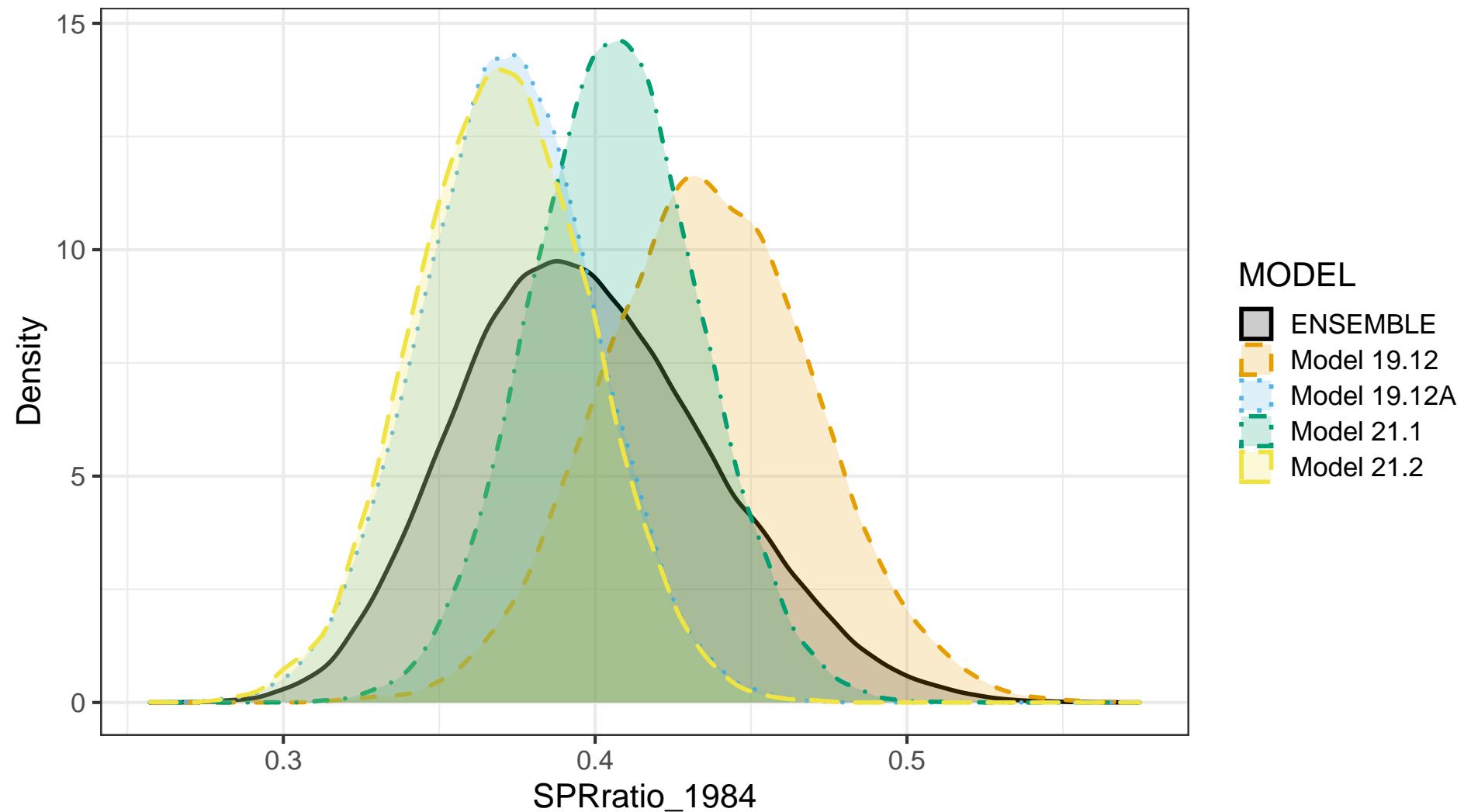
SPRratio_1982



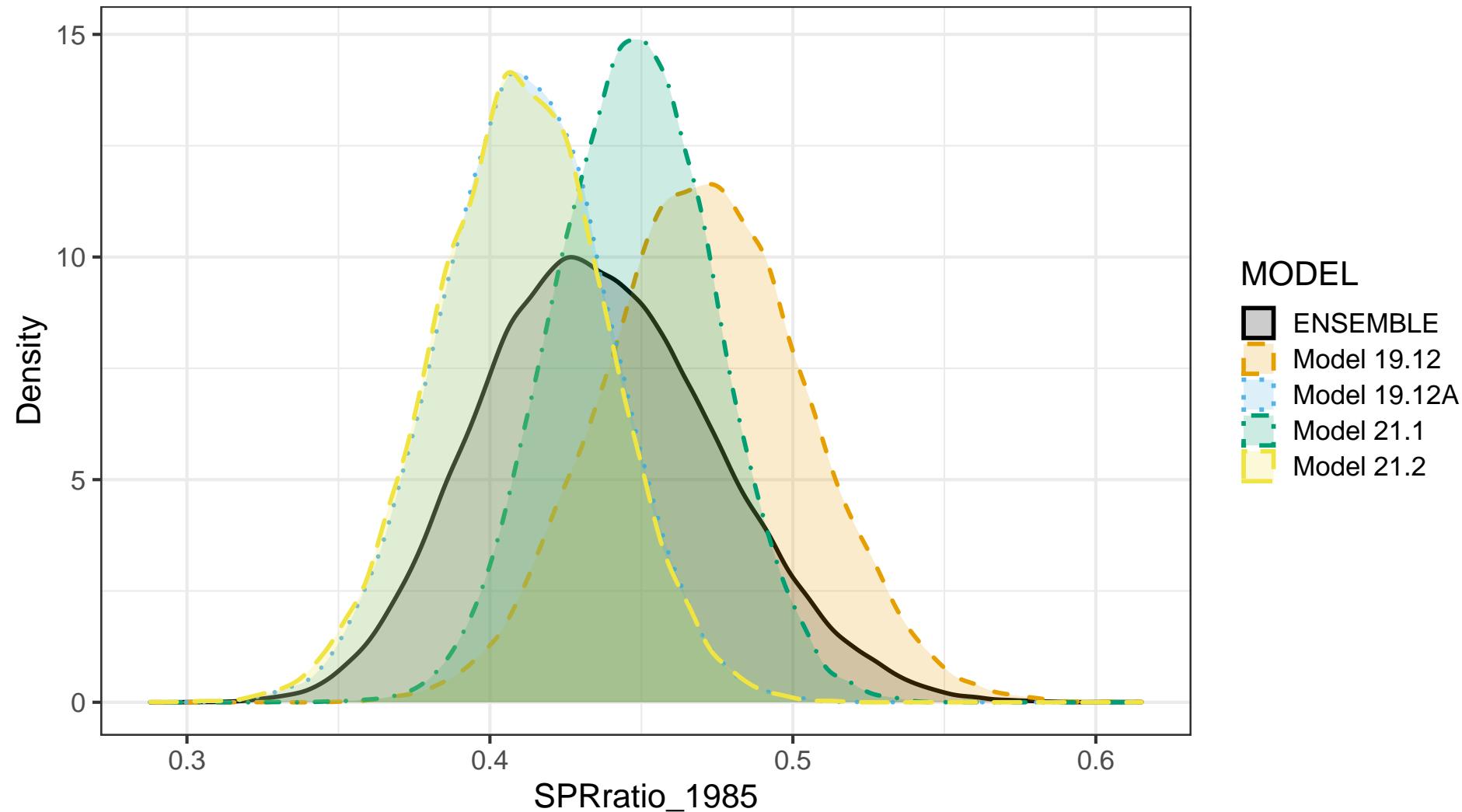
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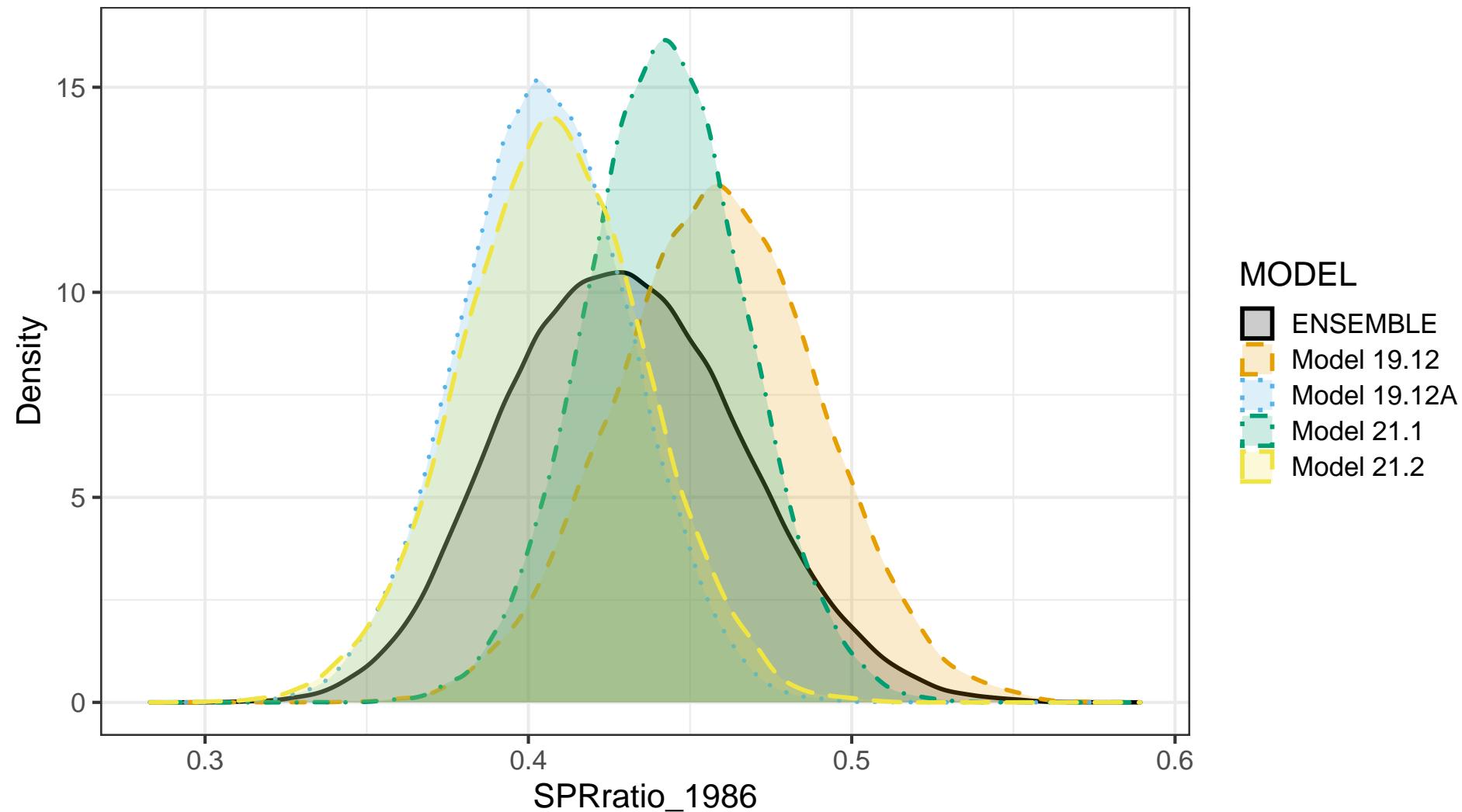
SPRratio_1984



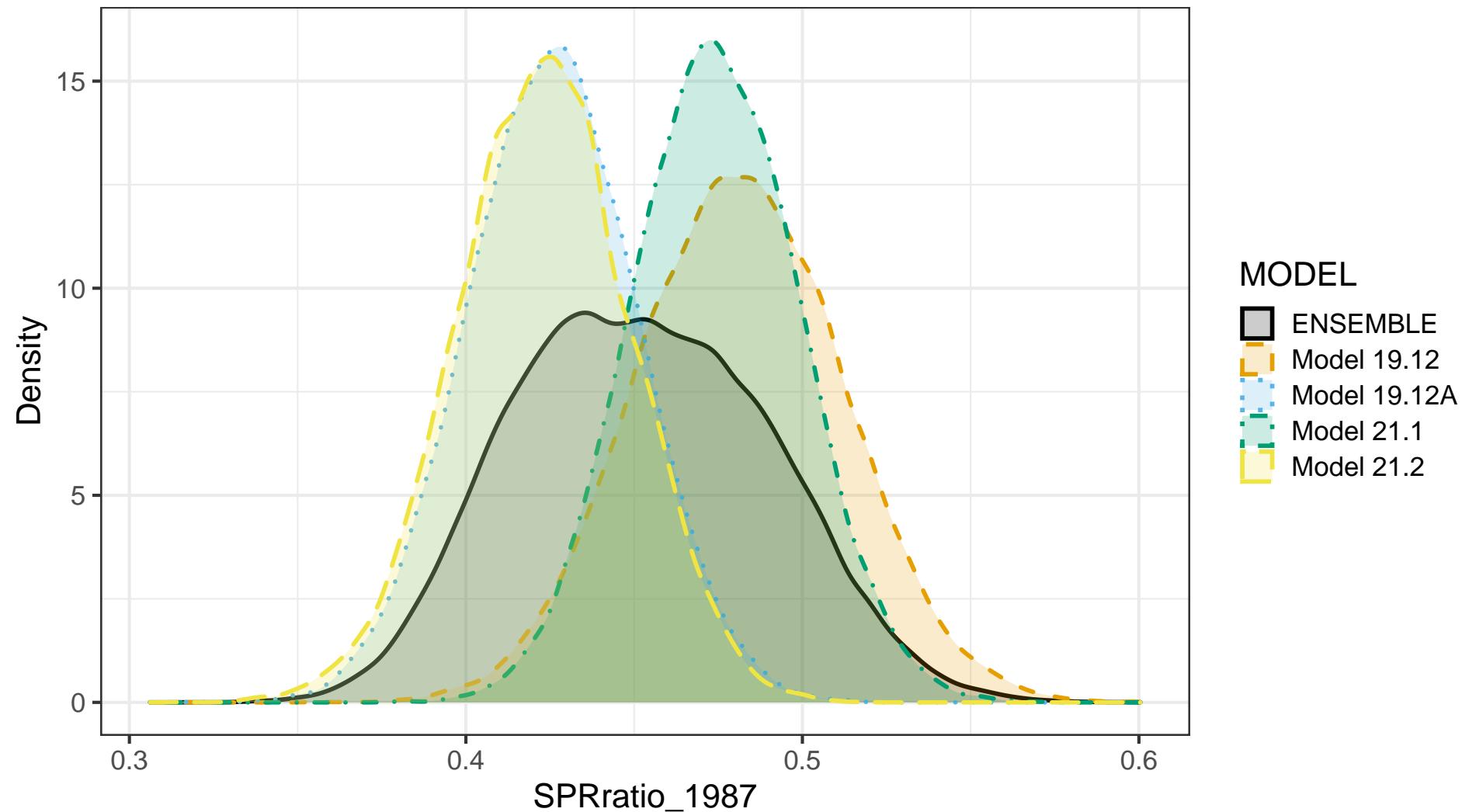
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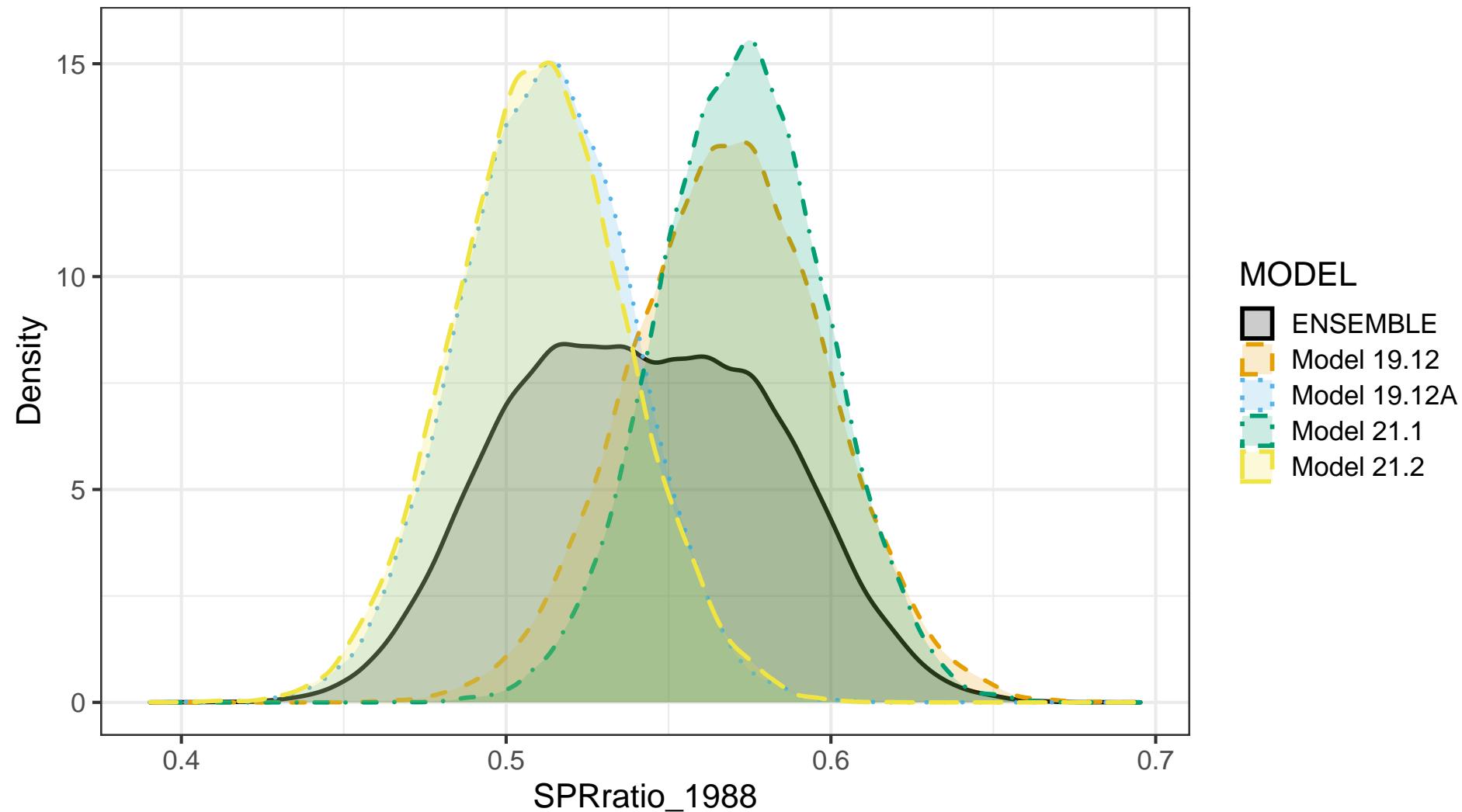
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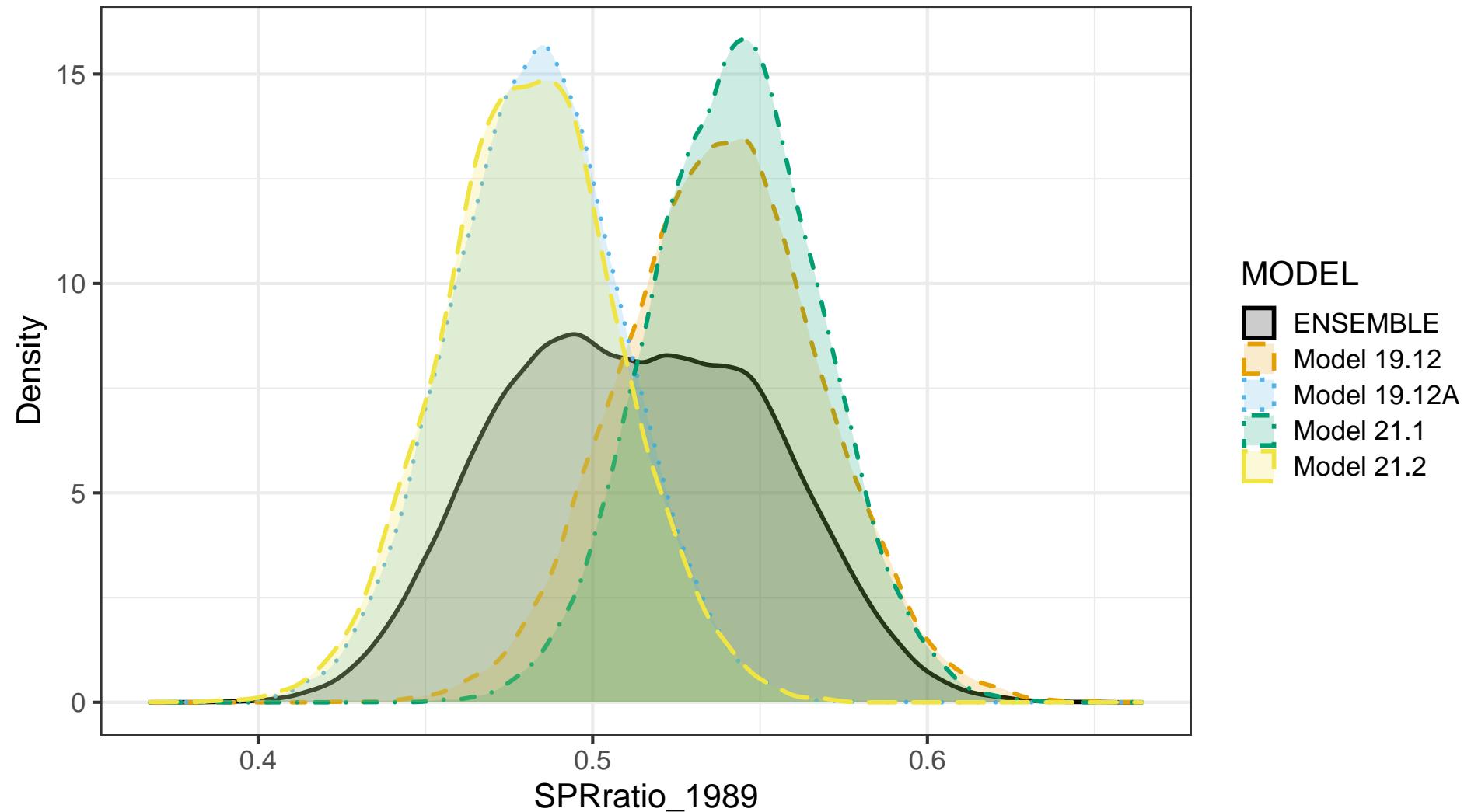
SPRratio_1987



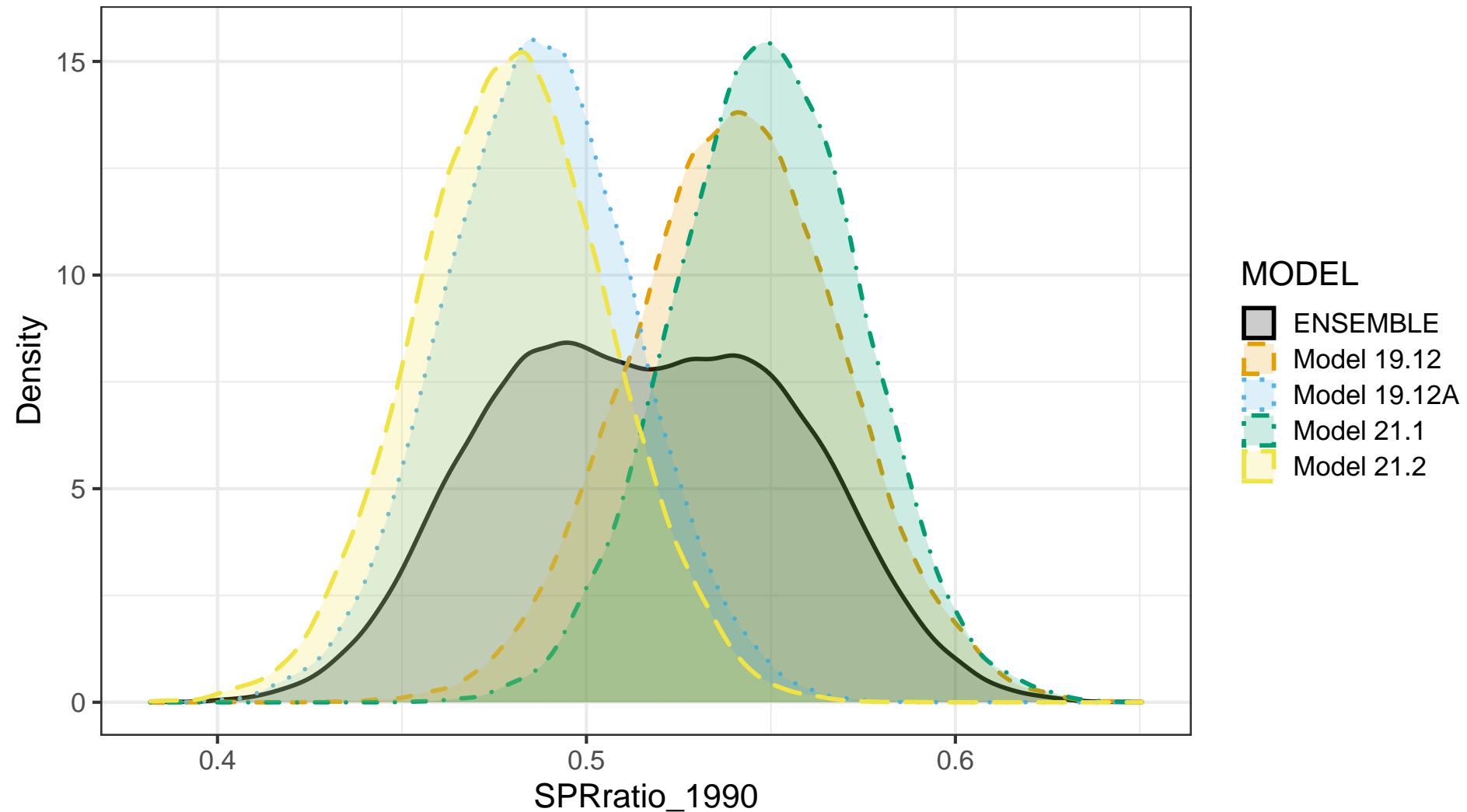
SPRratio_1988



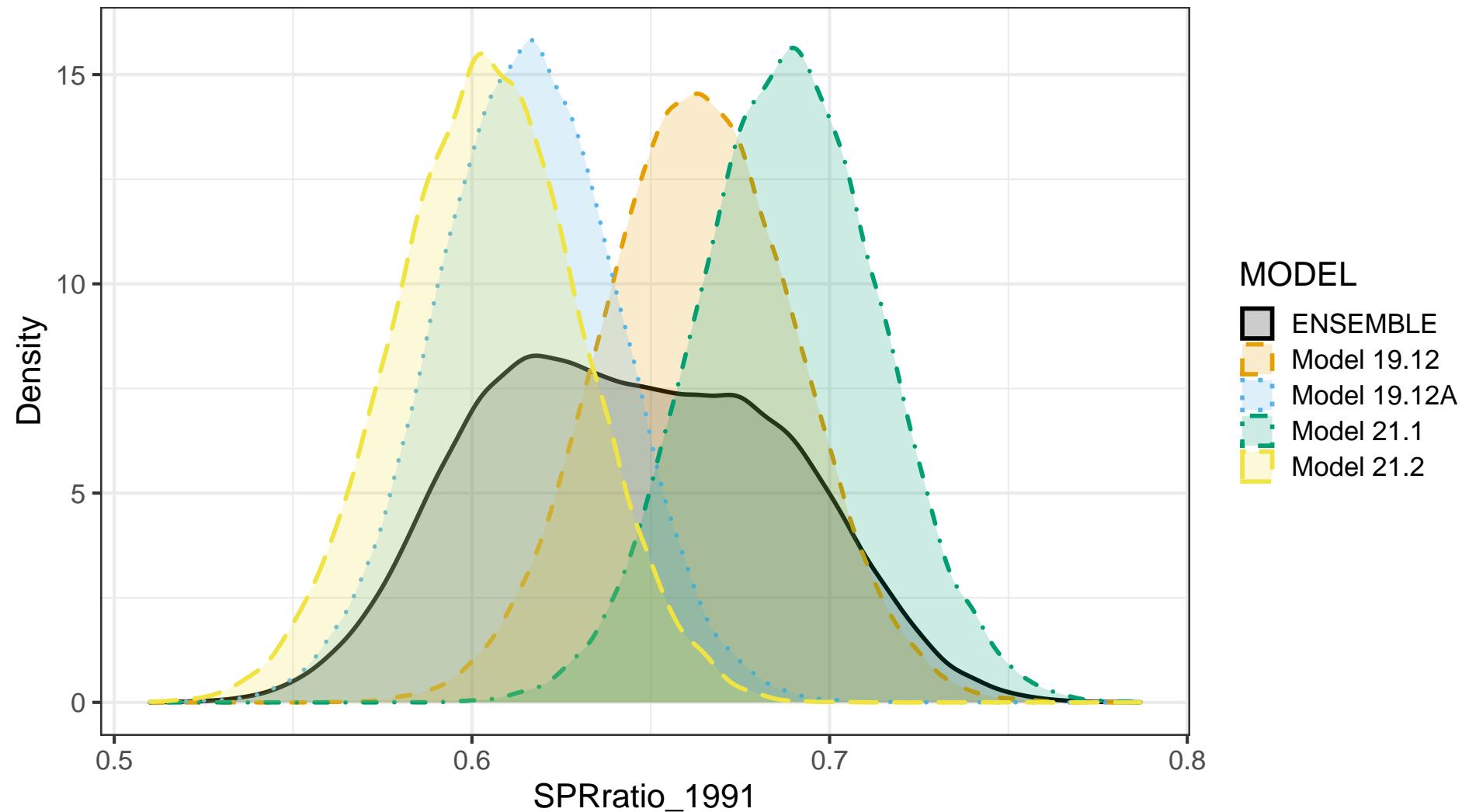
SPRratio_1989



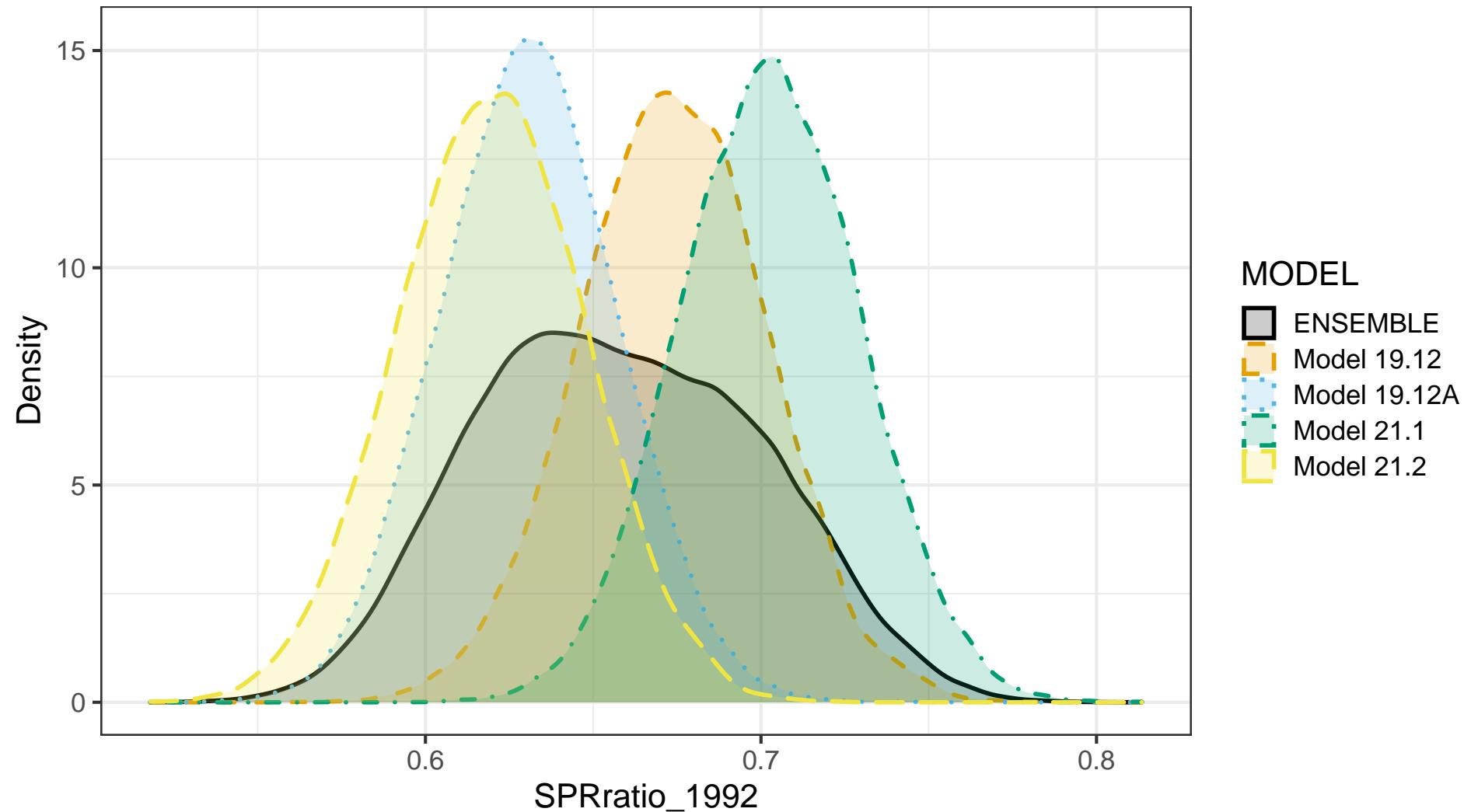
SPRratio_1990



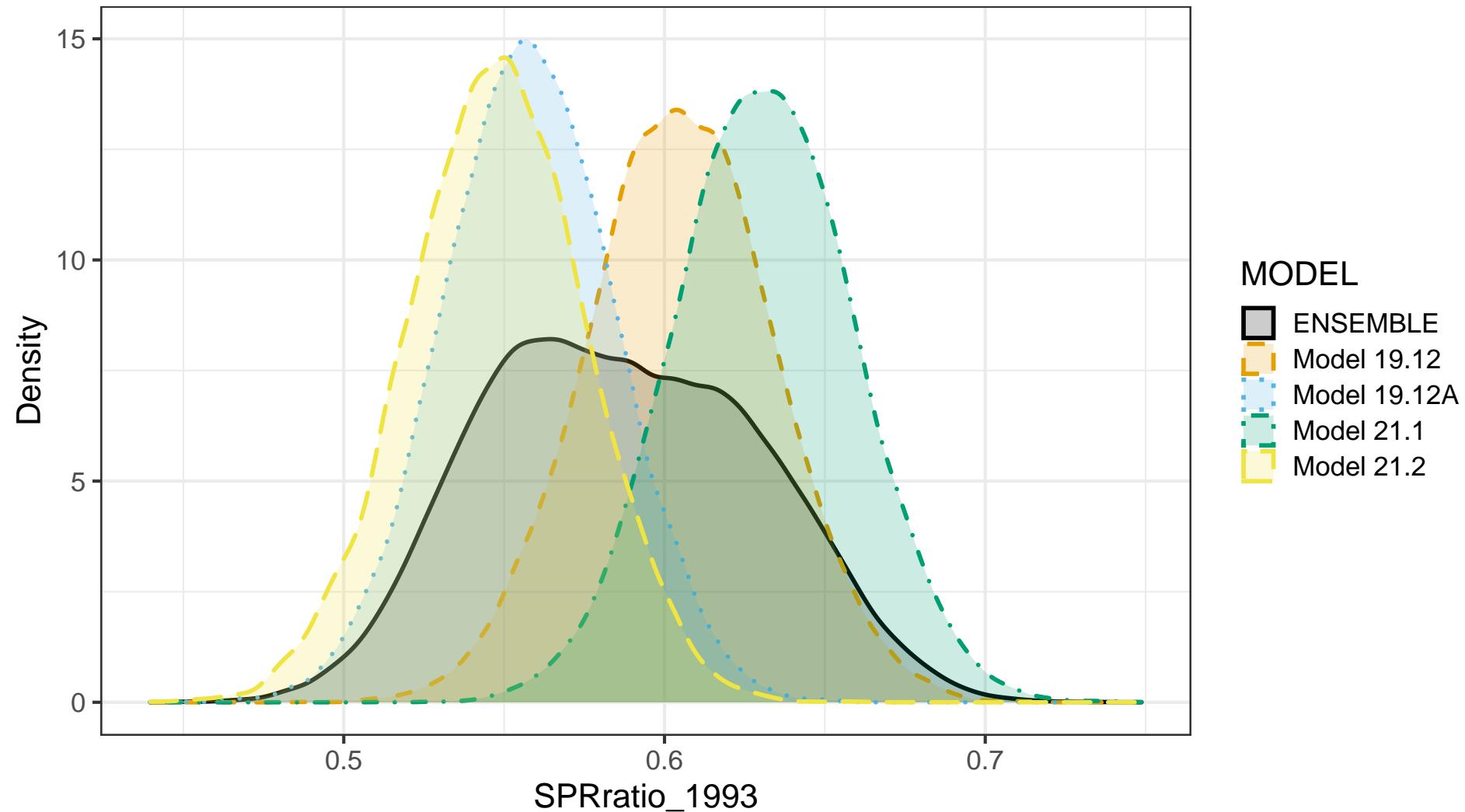
SPRratio_1991



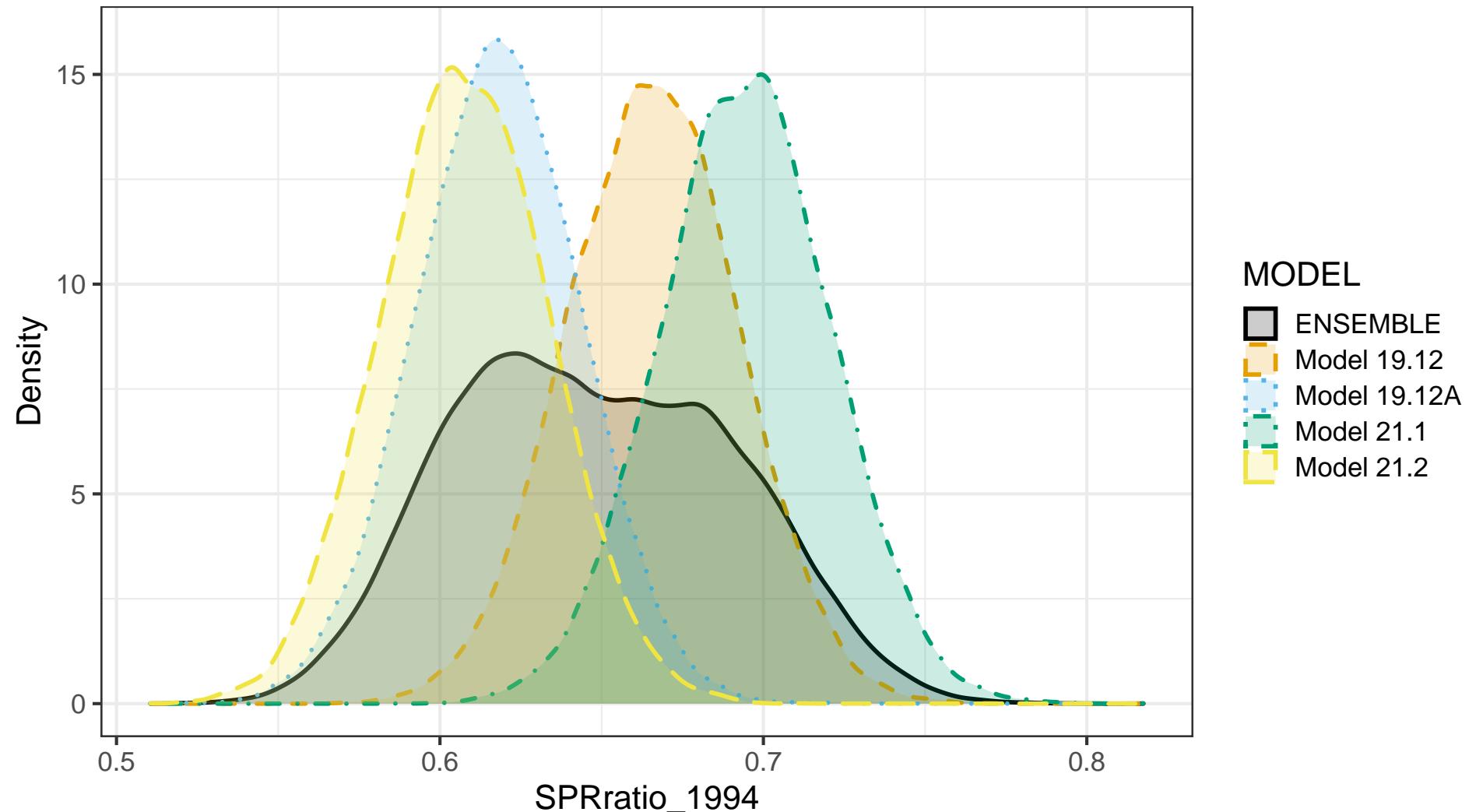
SPRratio_1992



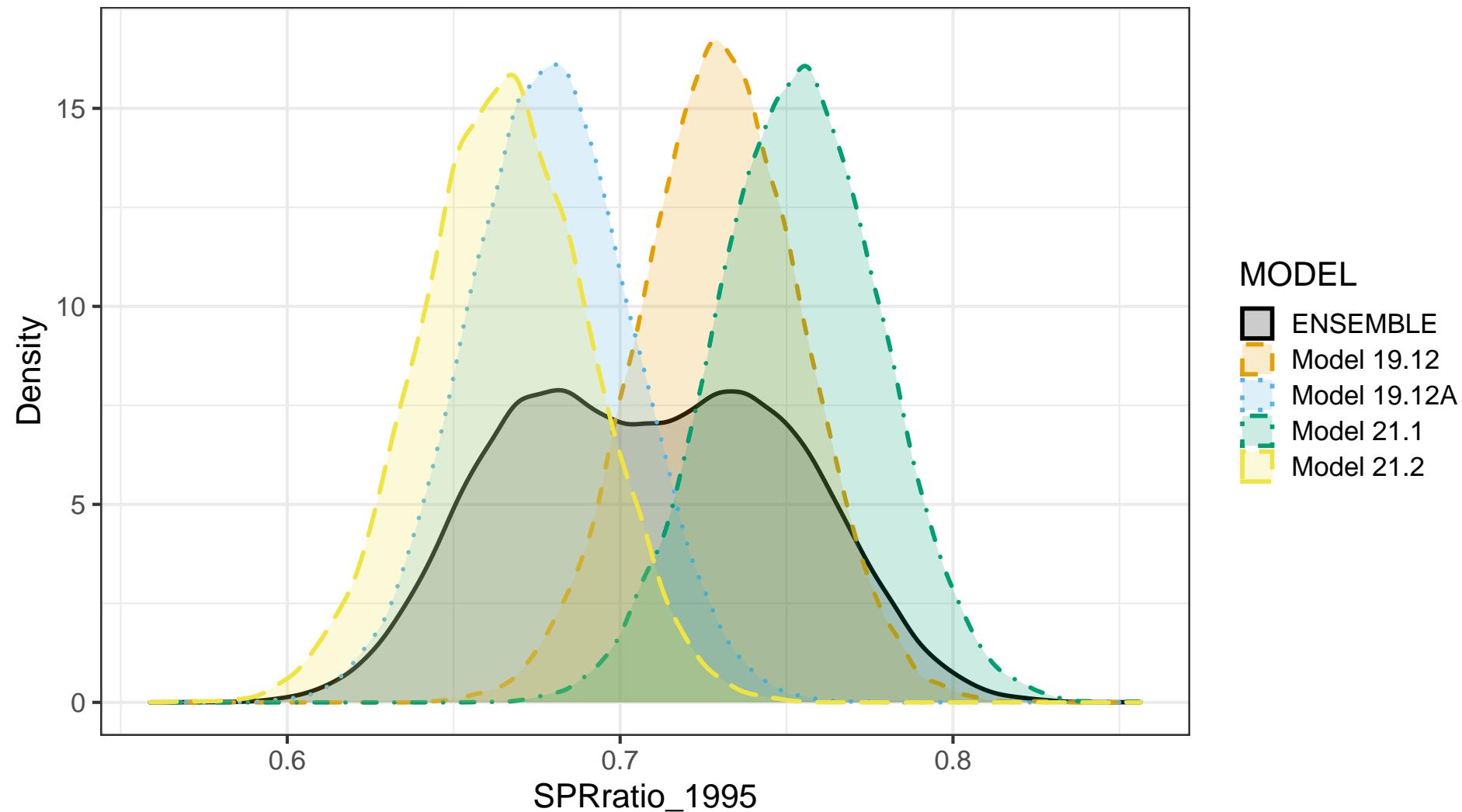
SPRratio_1993



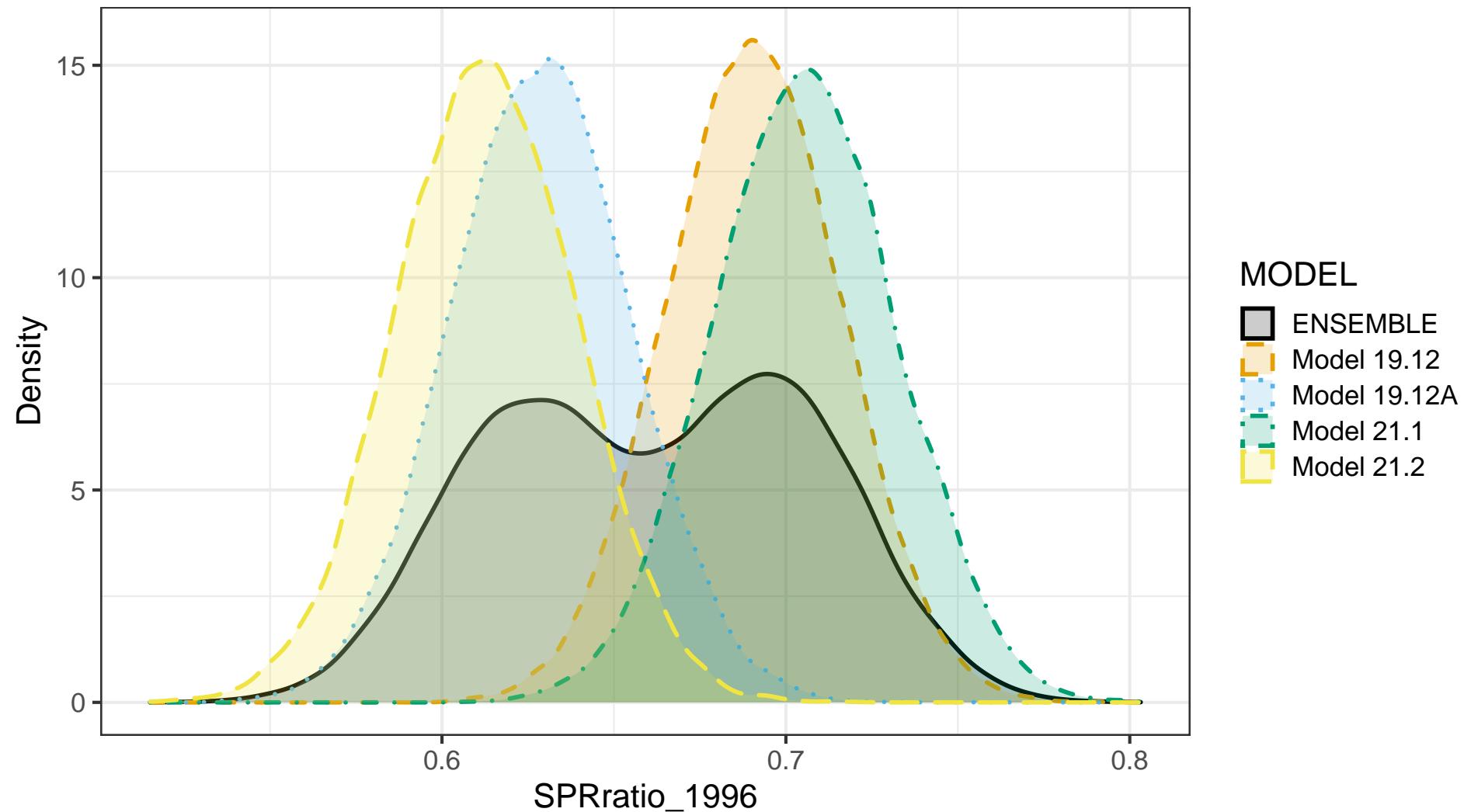
SPRratio_1994



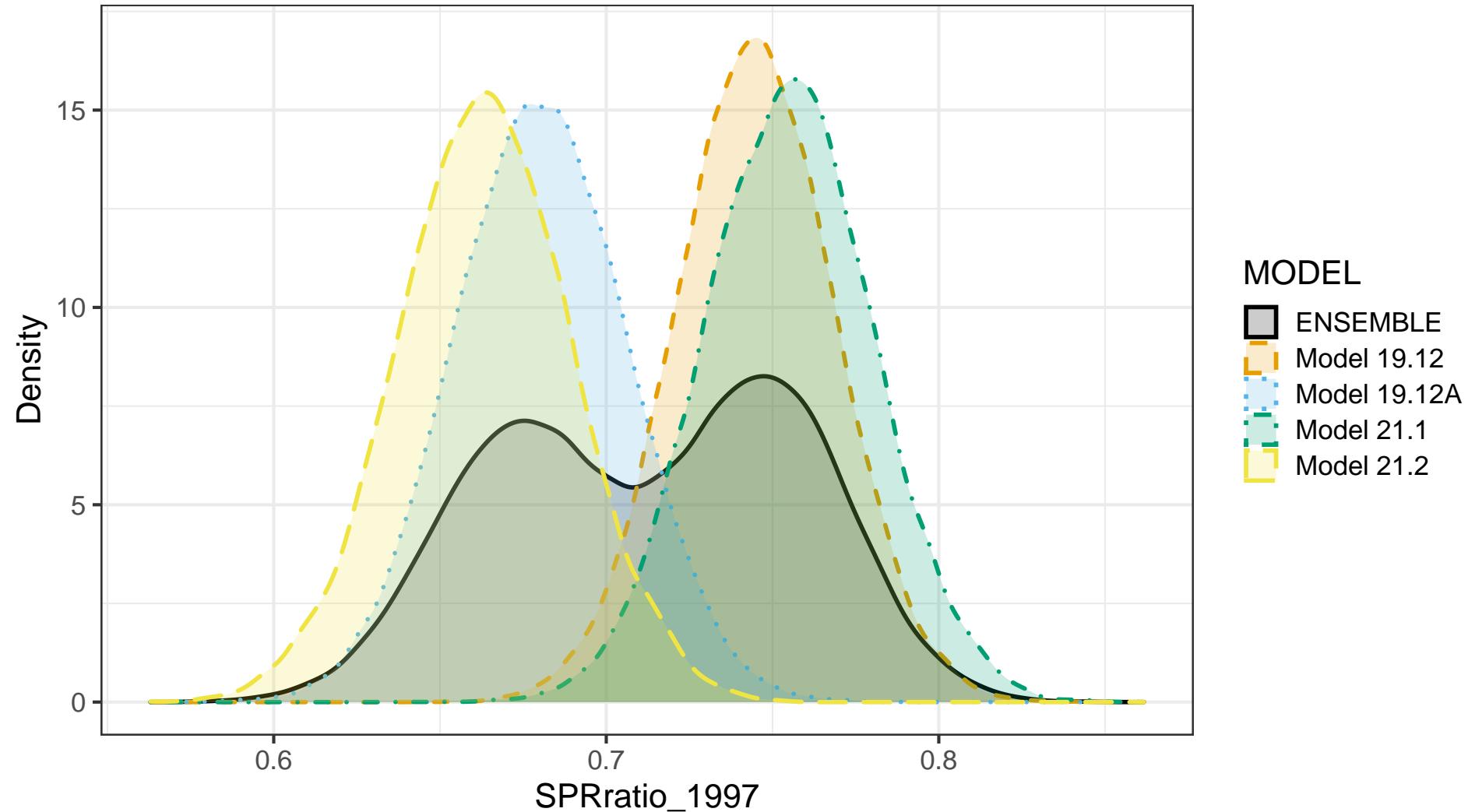
SPRratio_1995



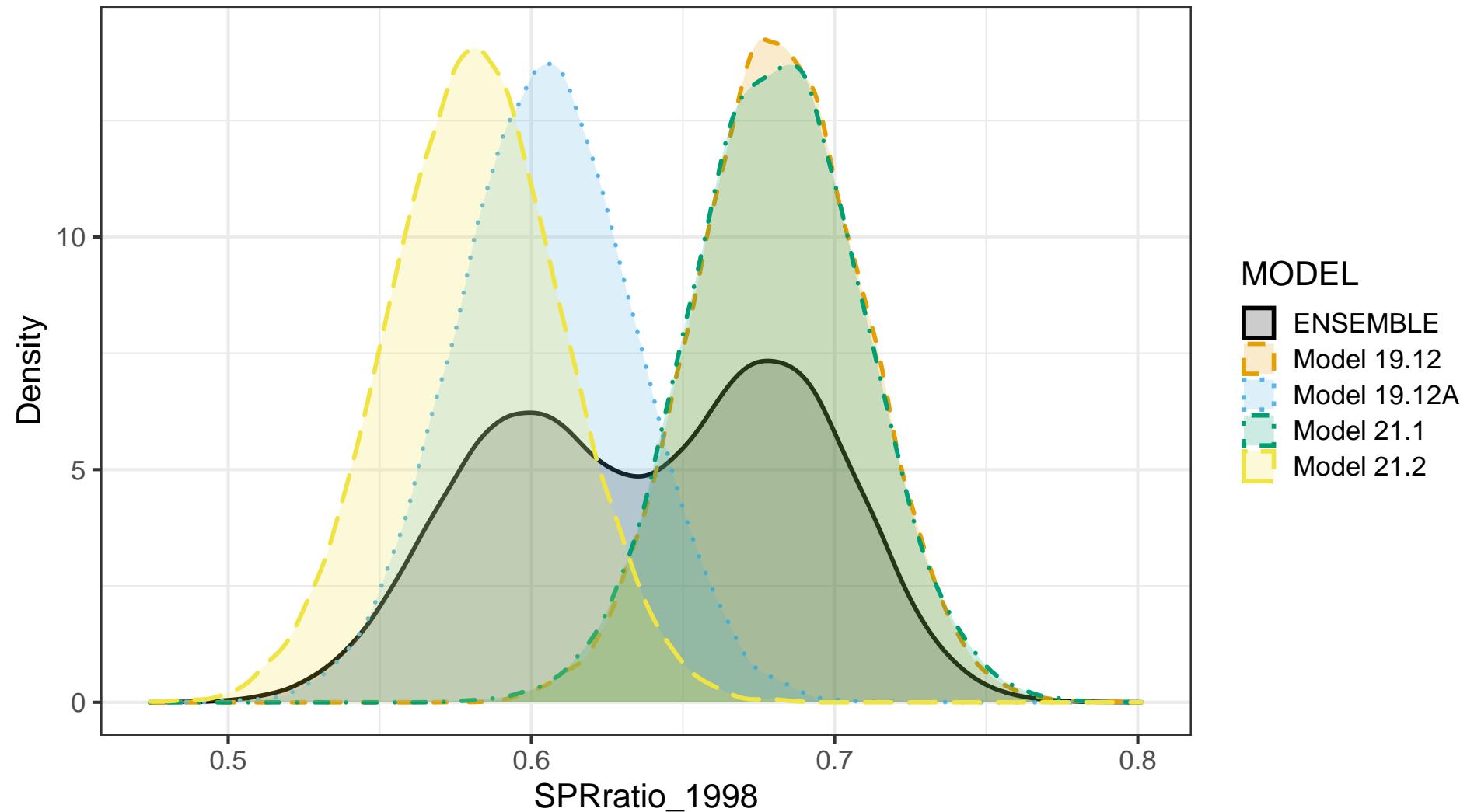
SPRratio_1996



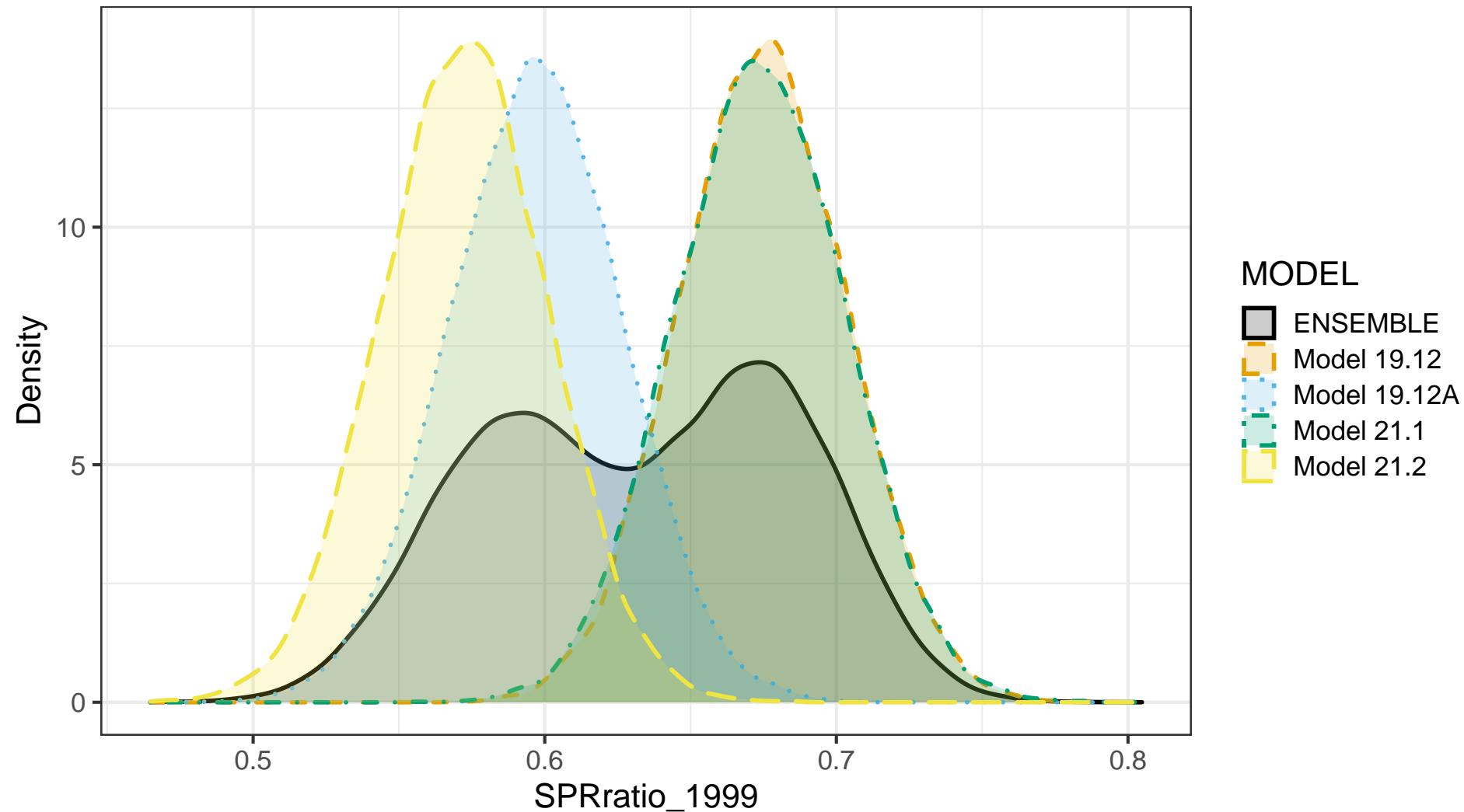
SPRratio_1997



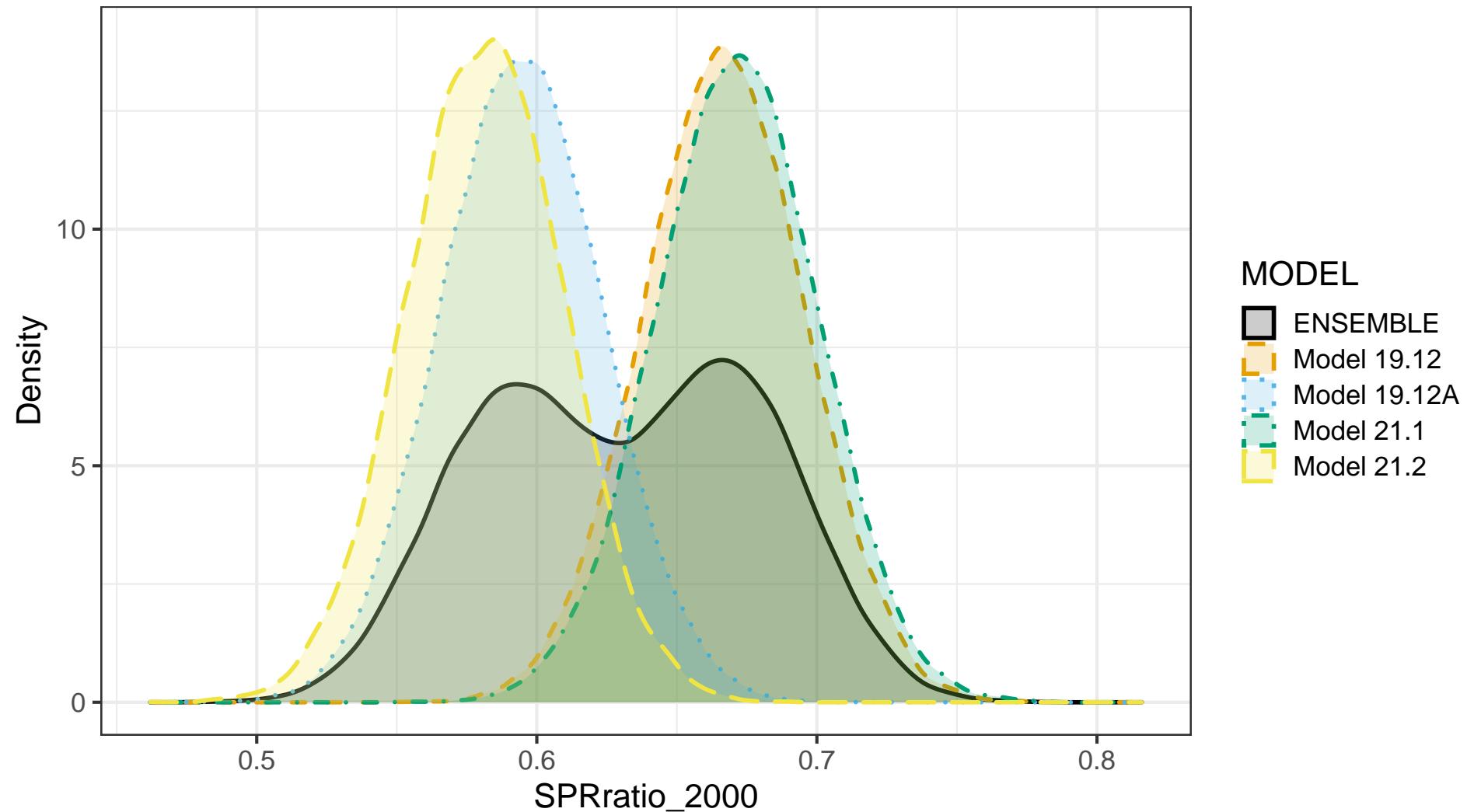
SPRratio_1998



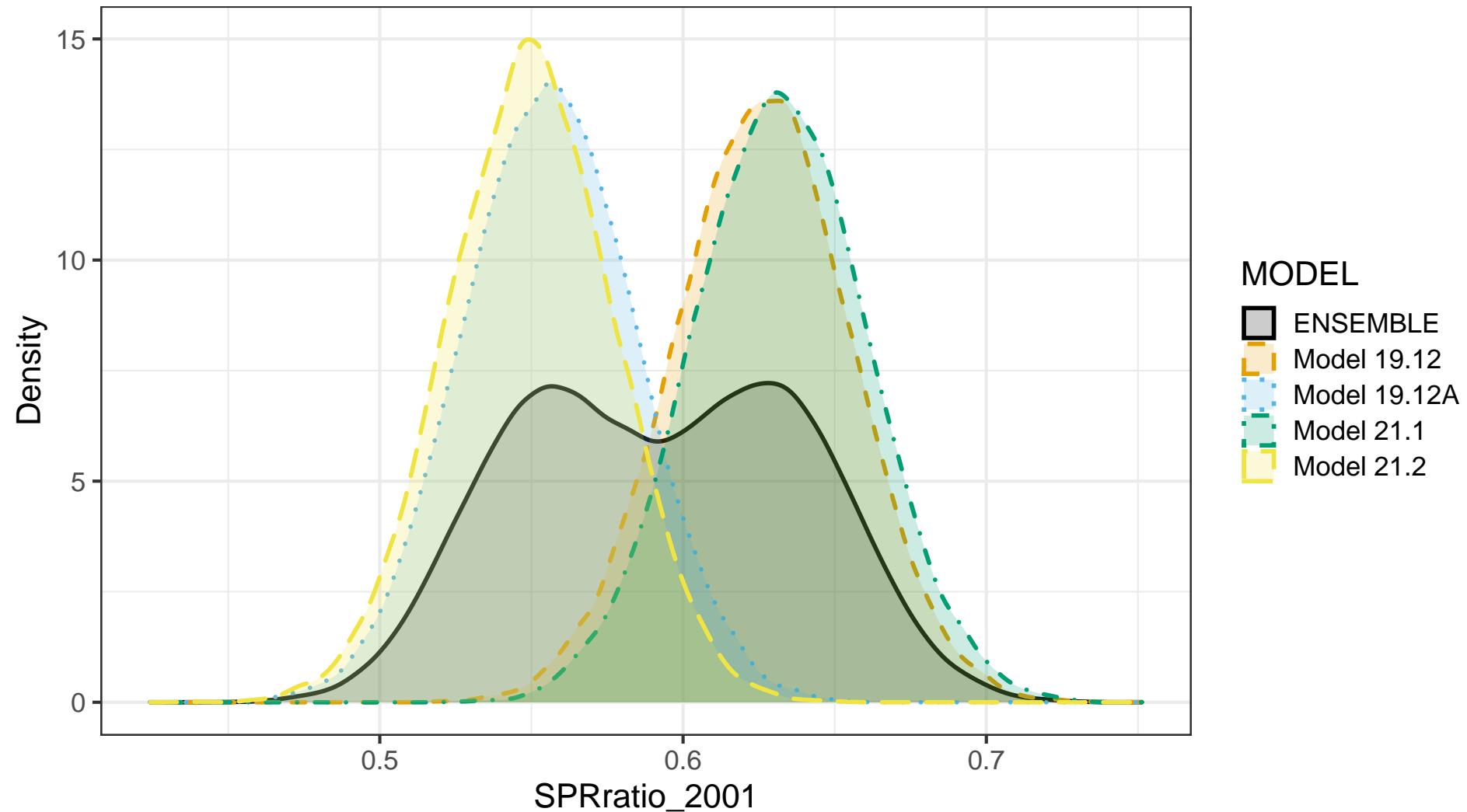
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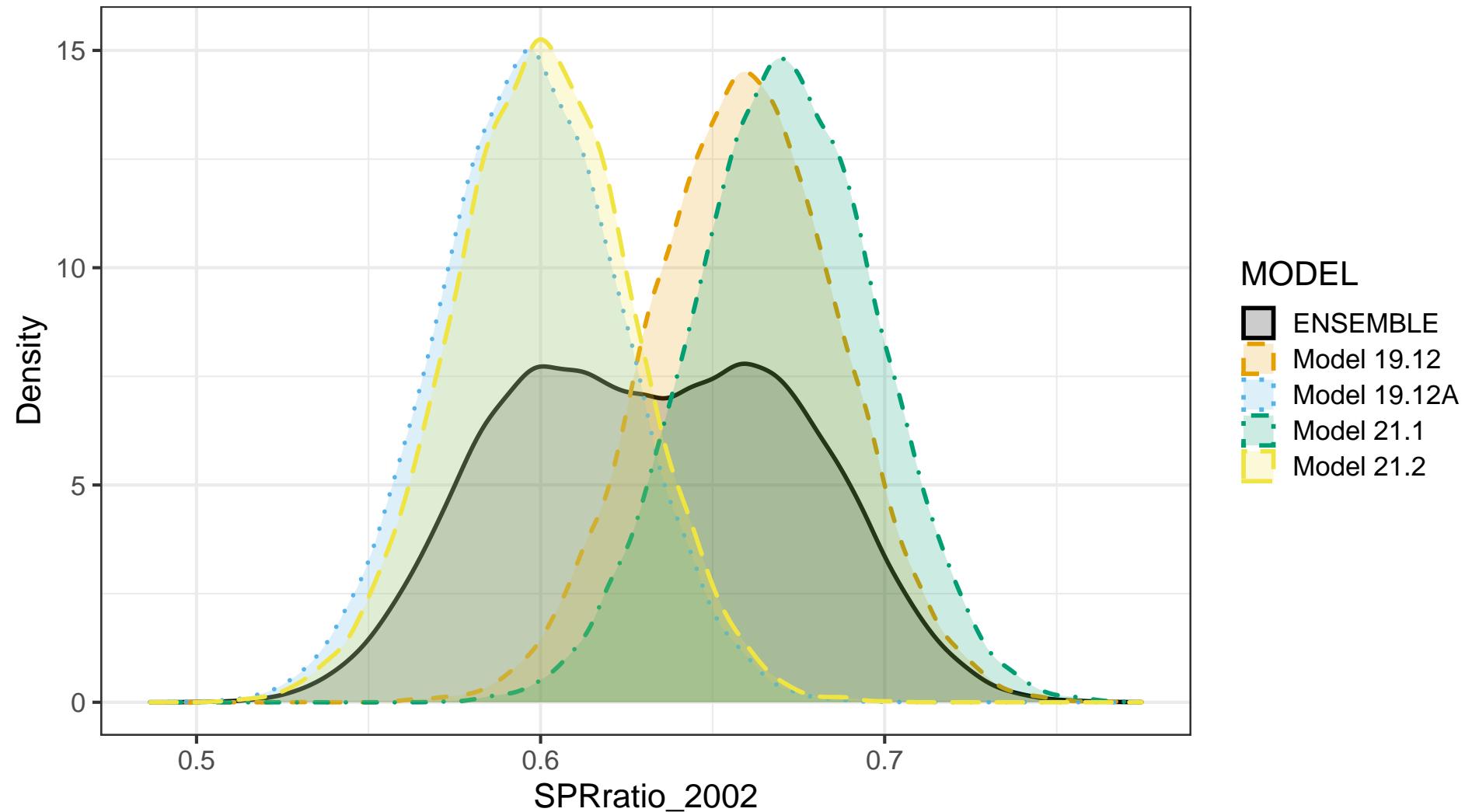
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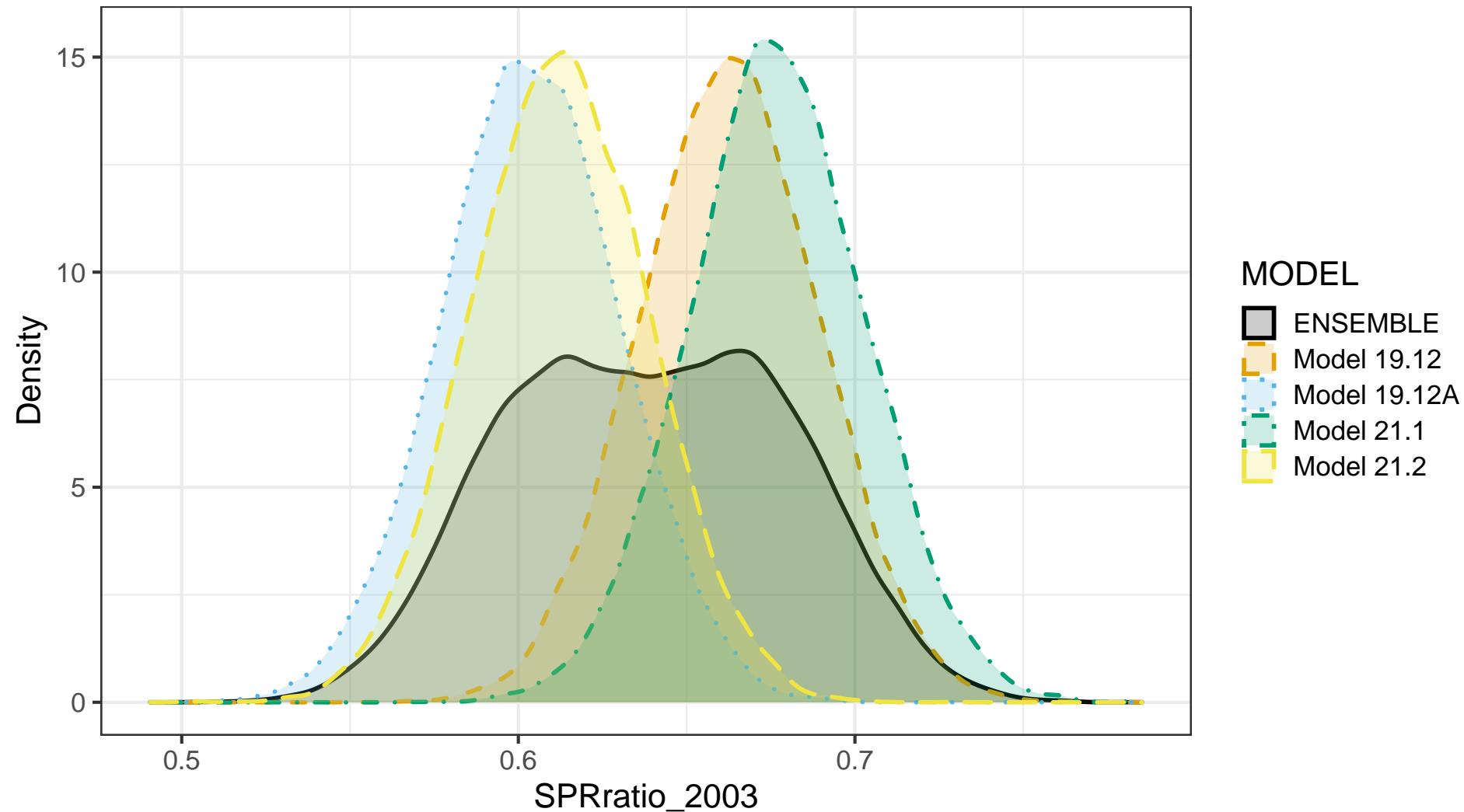
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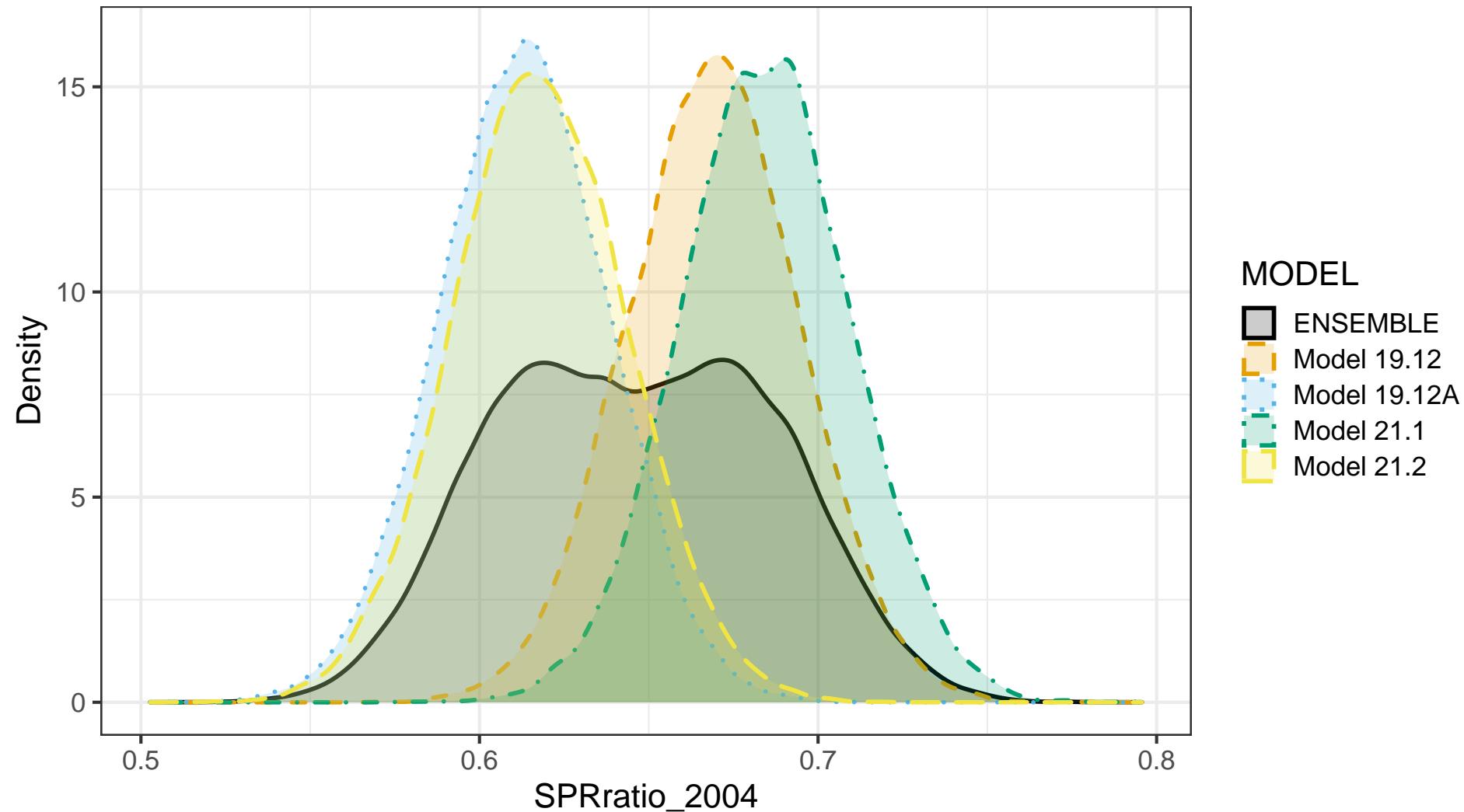
SPRratio_2002



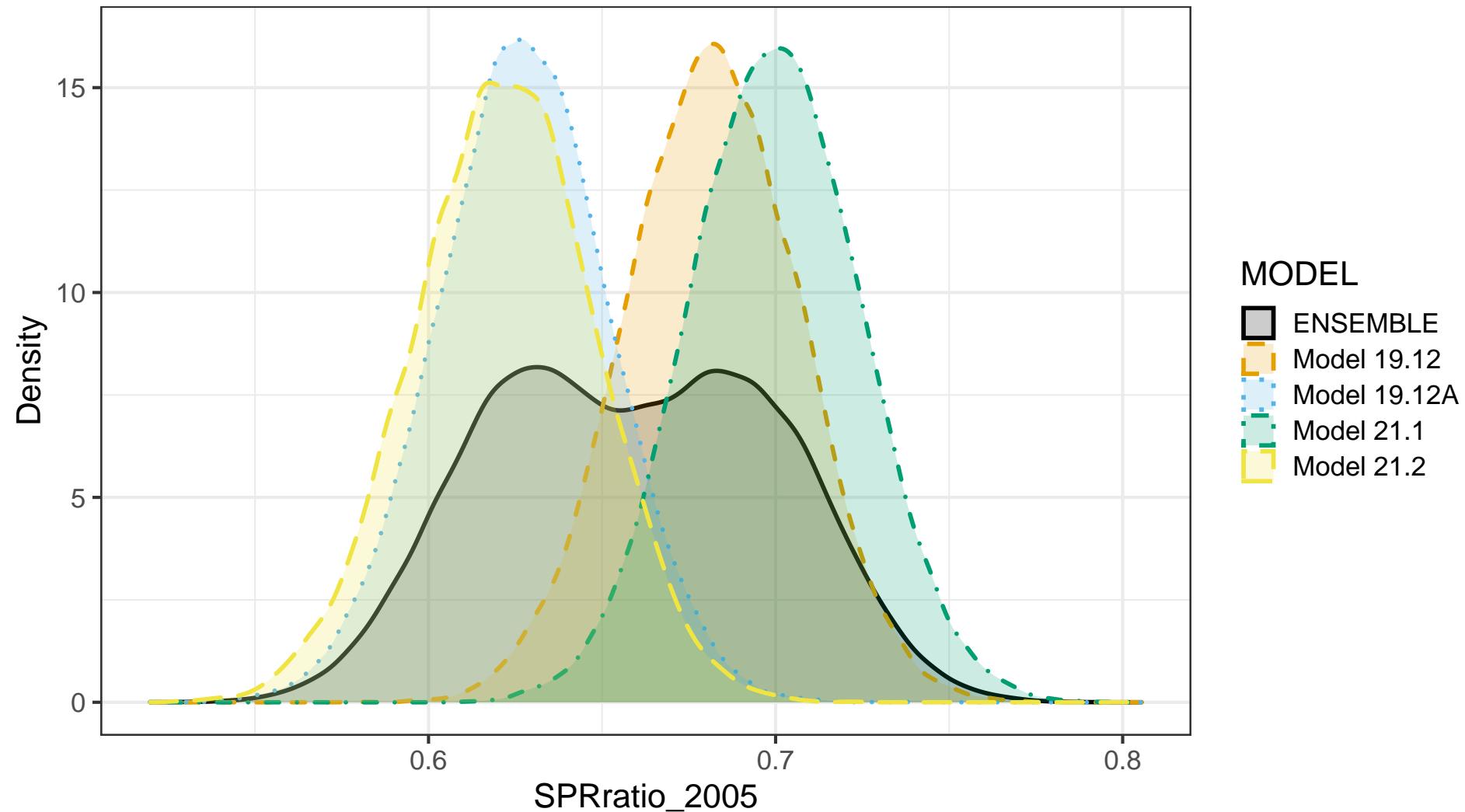
SPRratio_2003



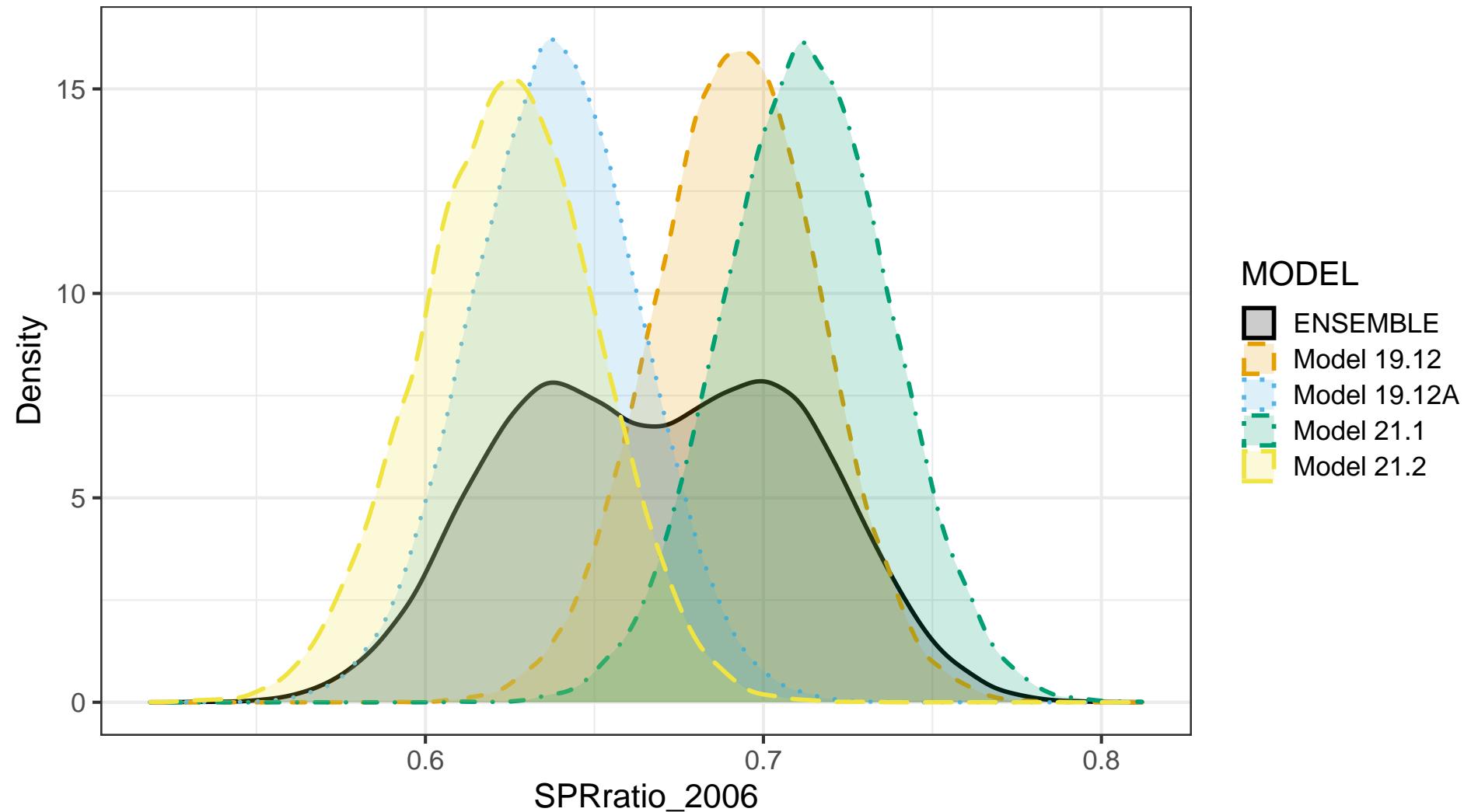
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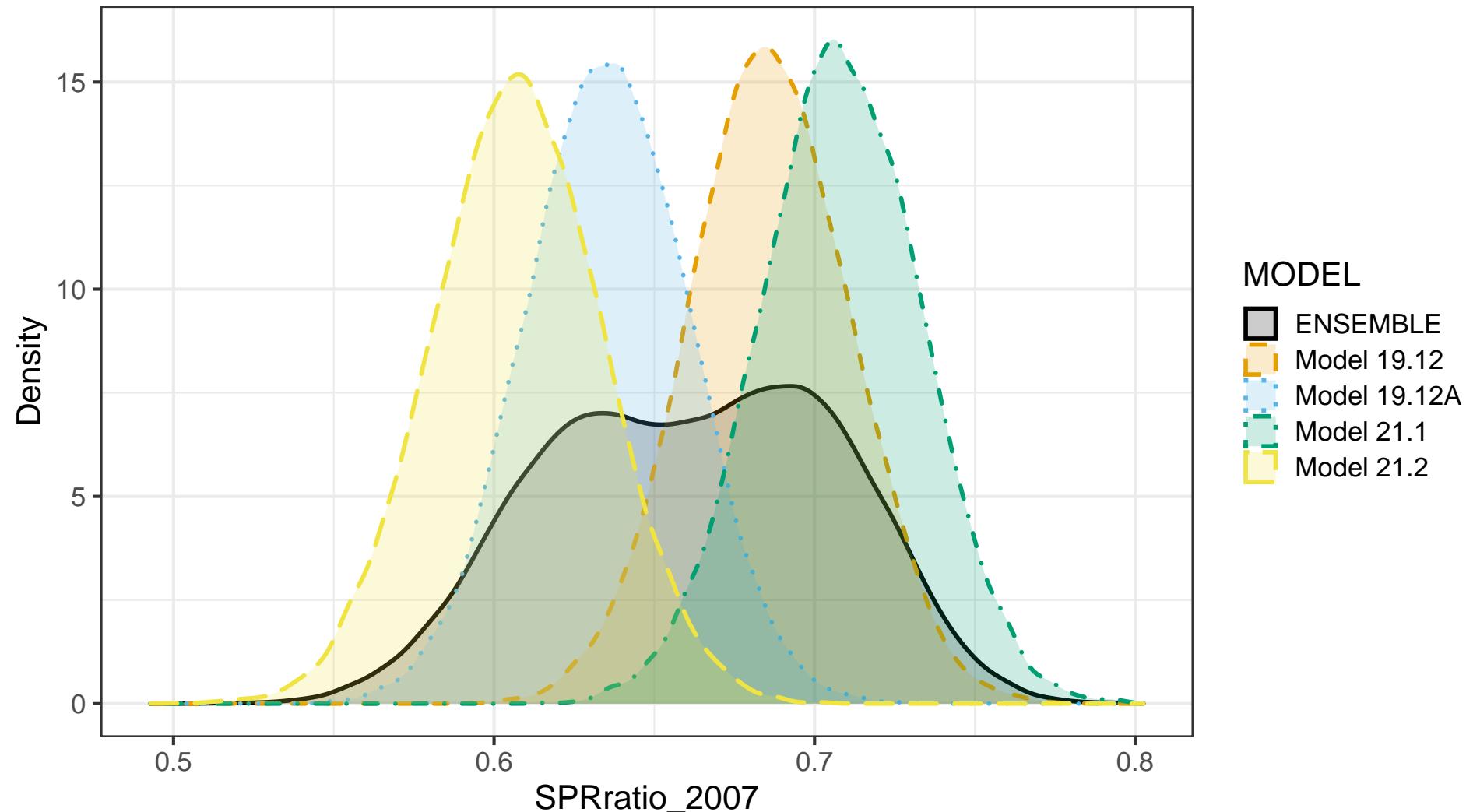
SPRratio_2005



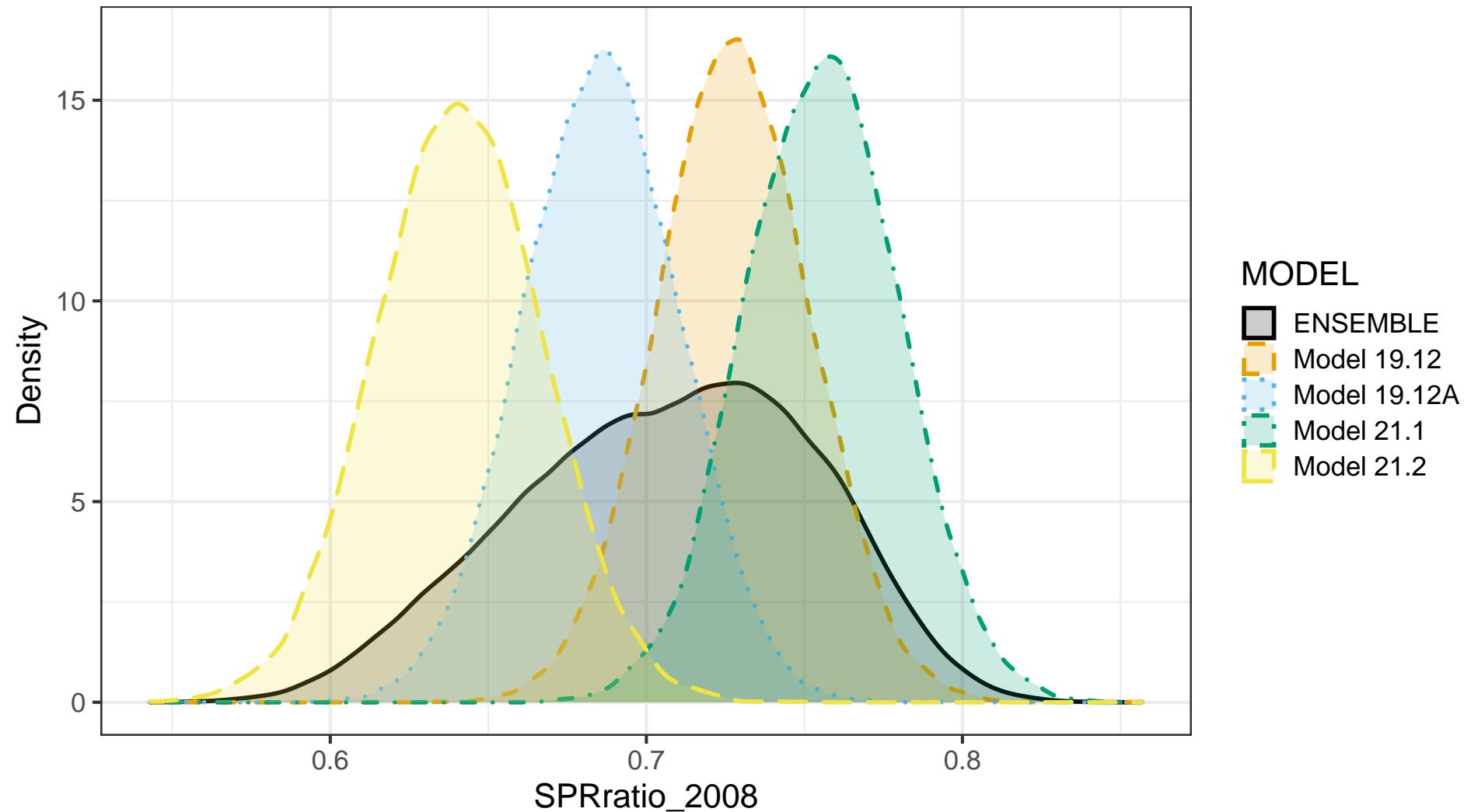
SPRratio_2006



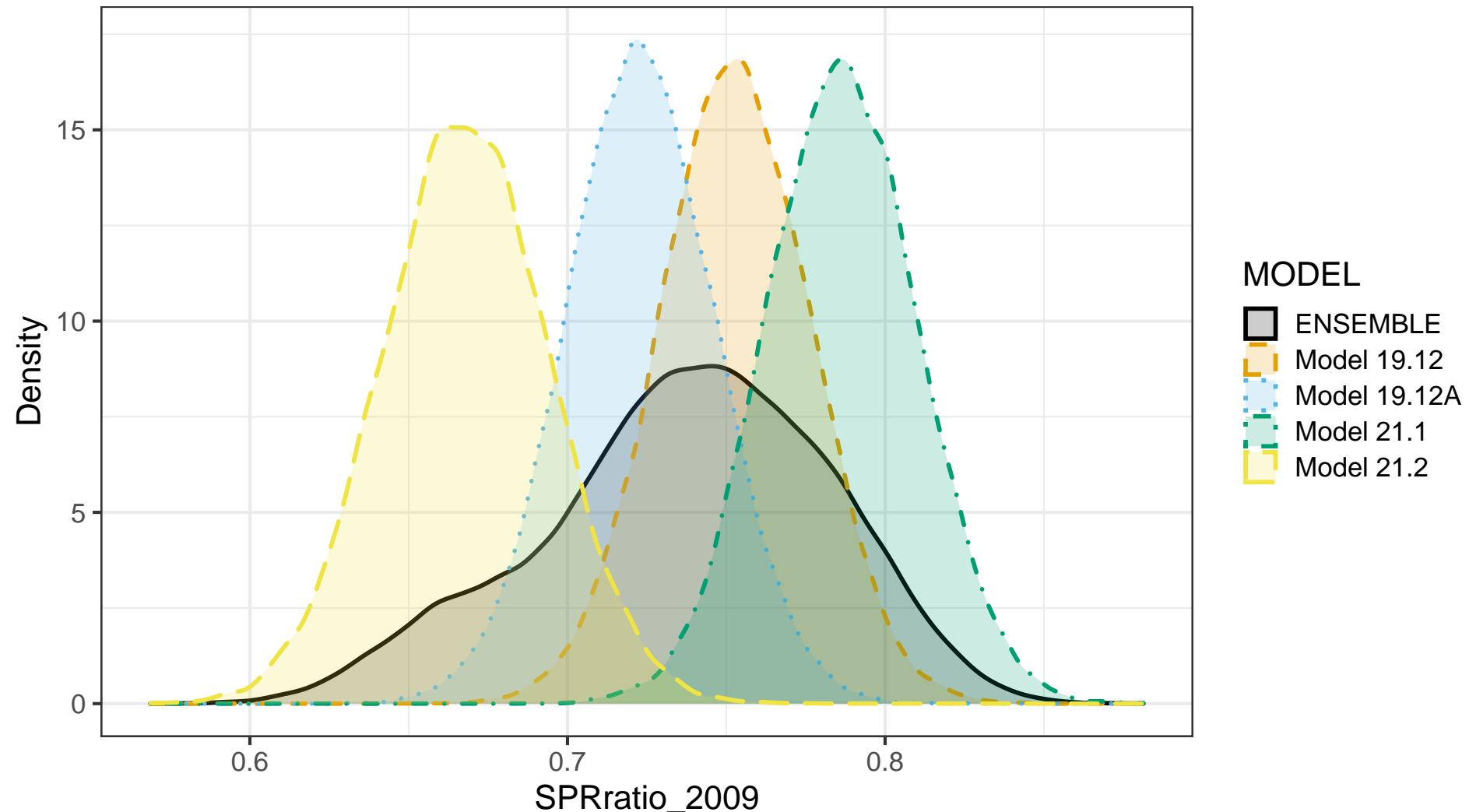
SPRratio_2007



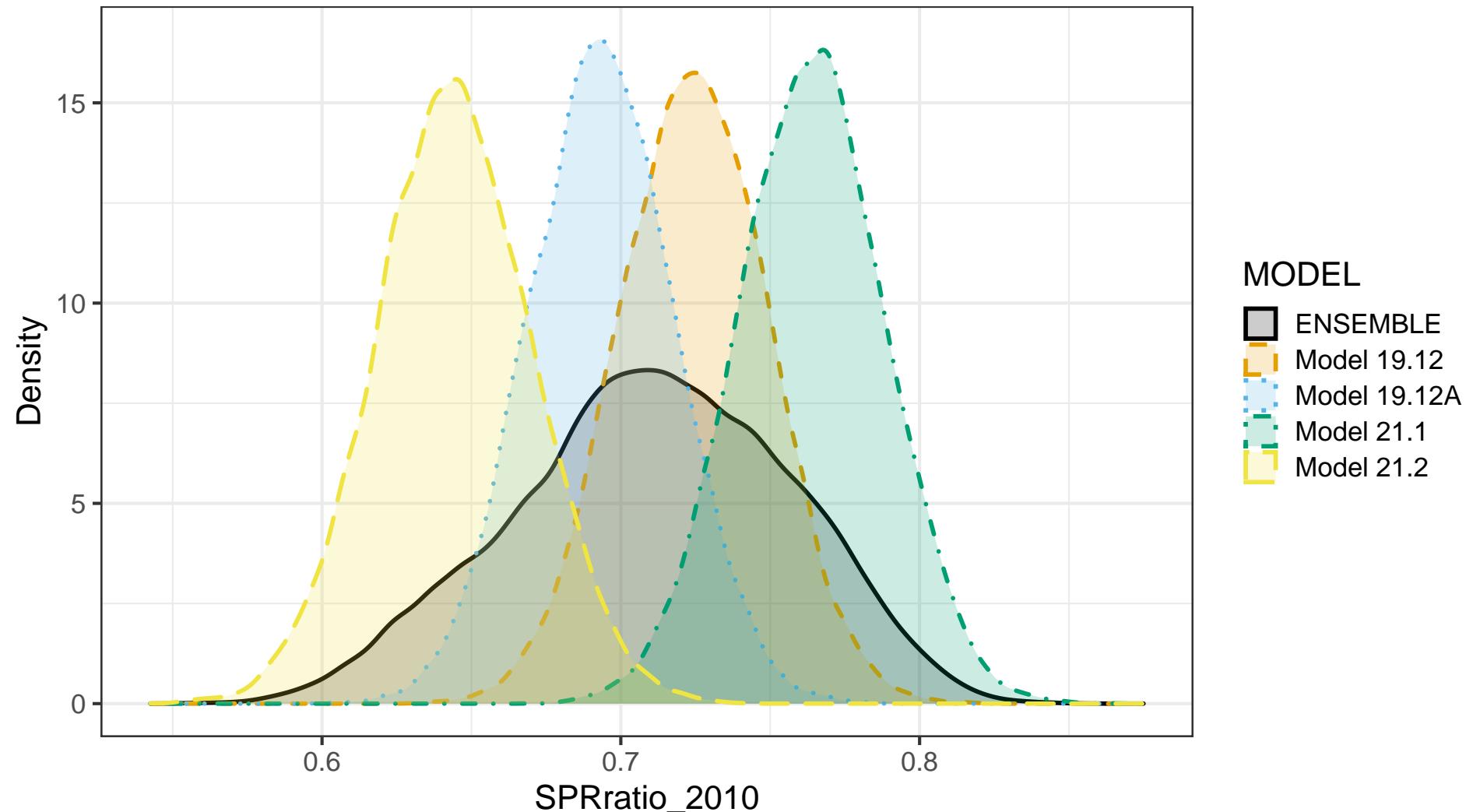
SPRratio_2008



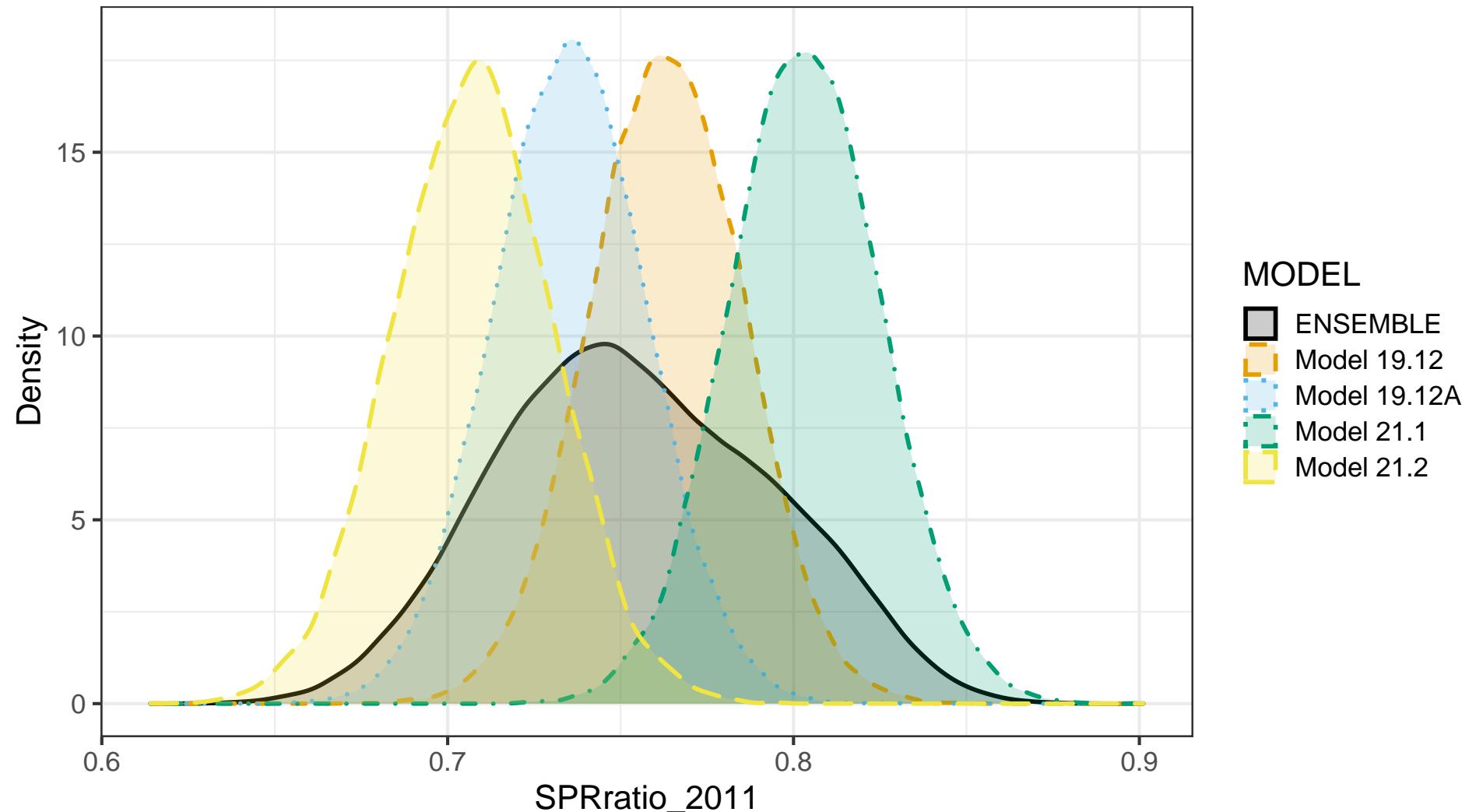
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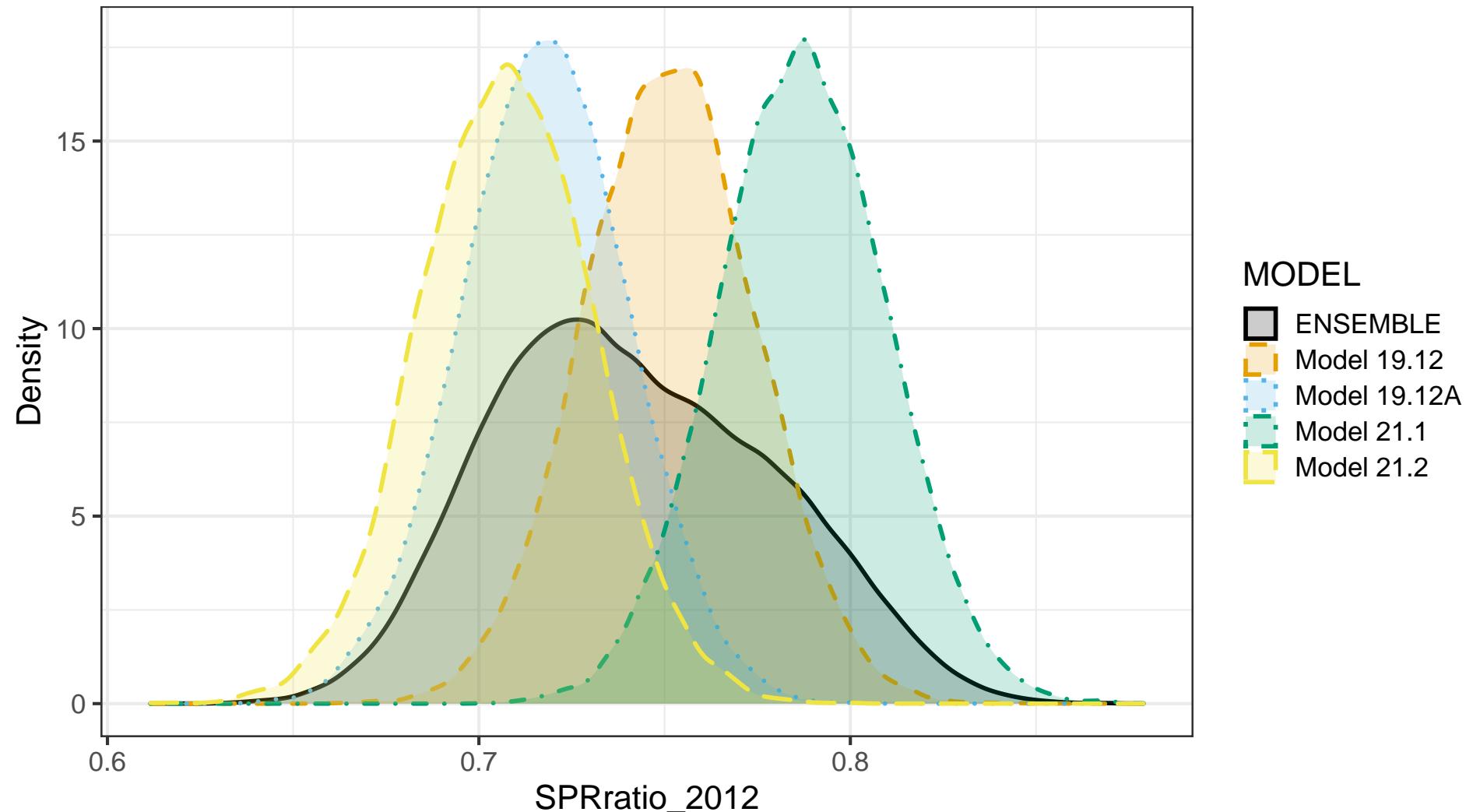
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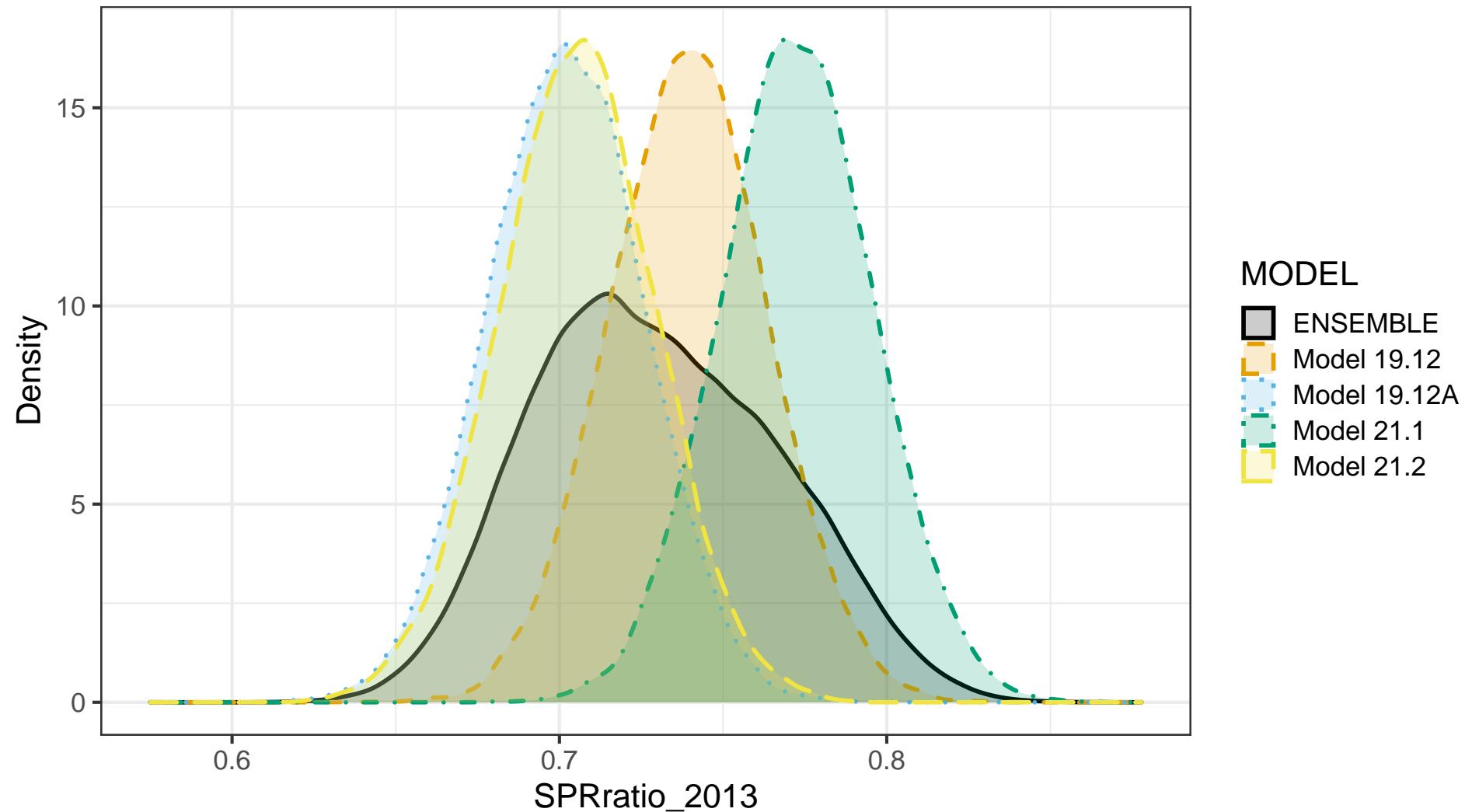
SPRratio_2011



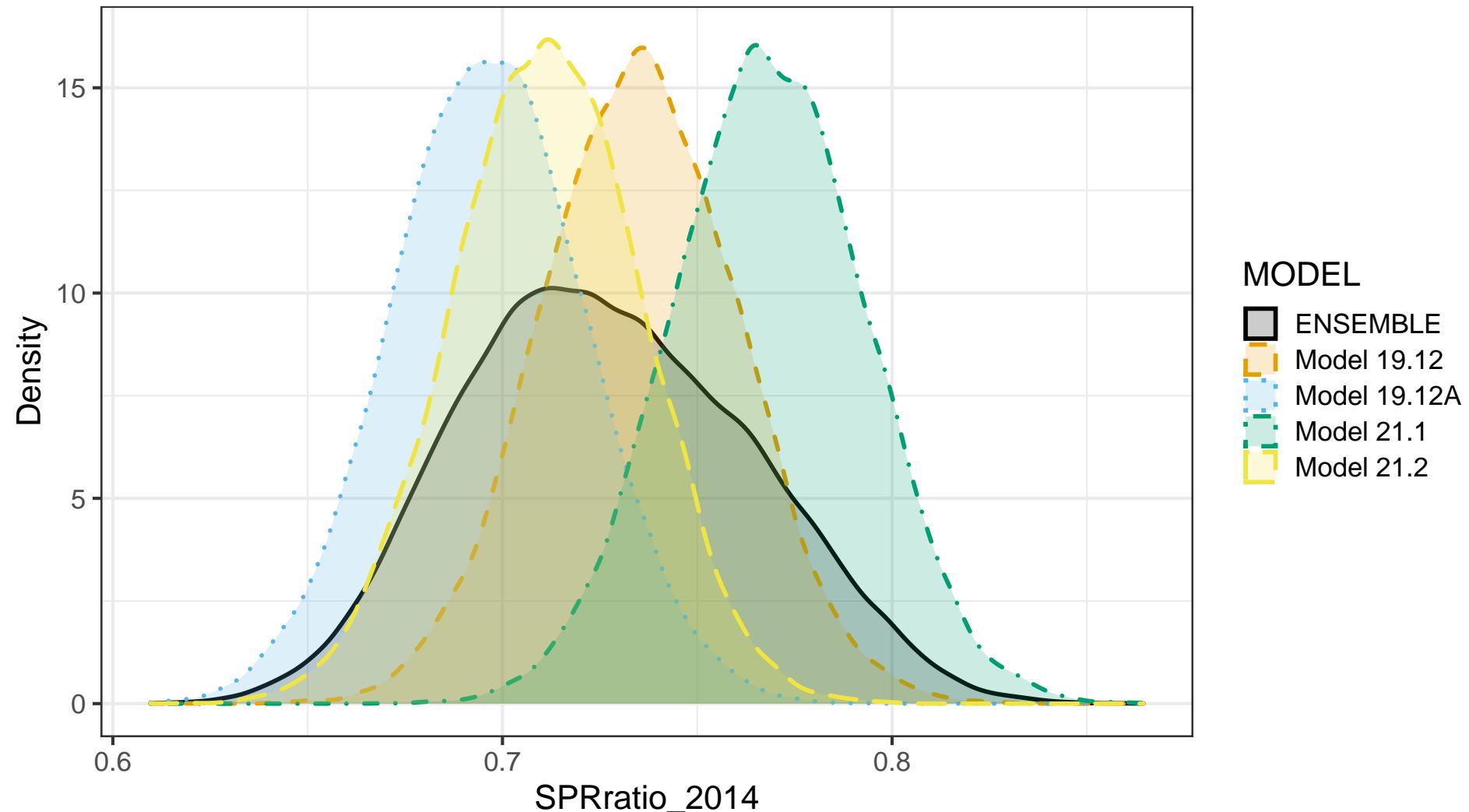
SPRratio_2012



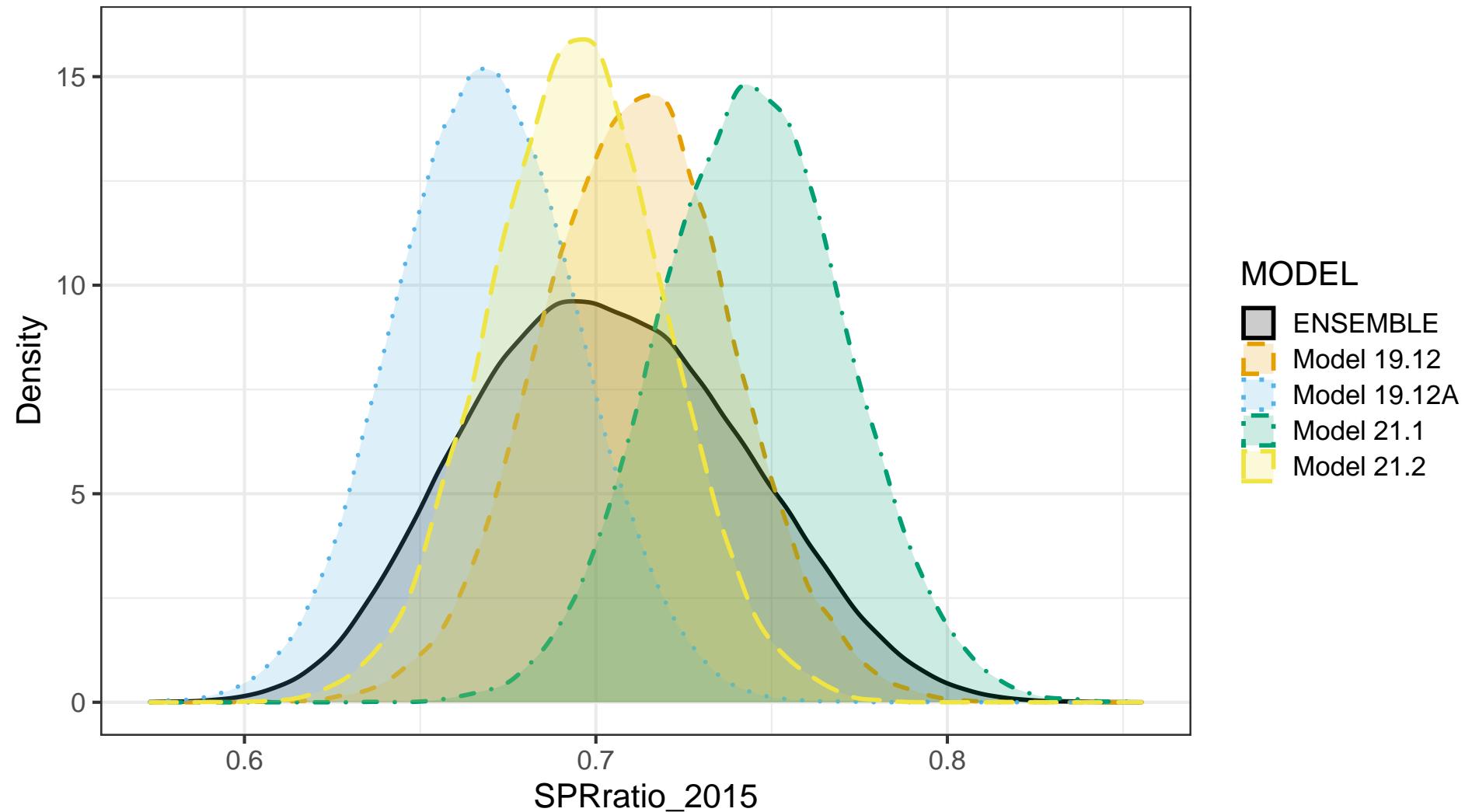
SPRratio_2013



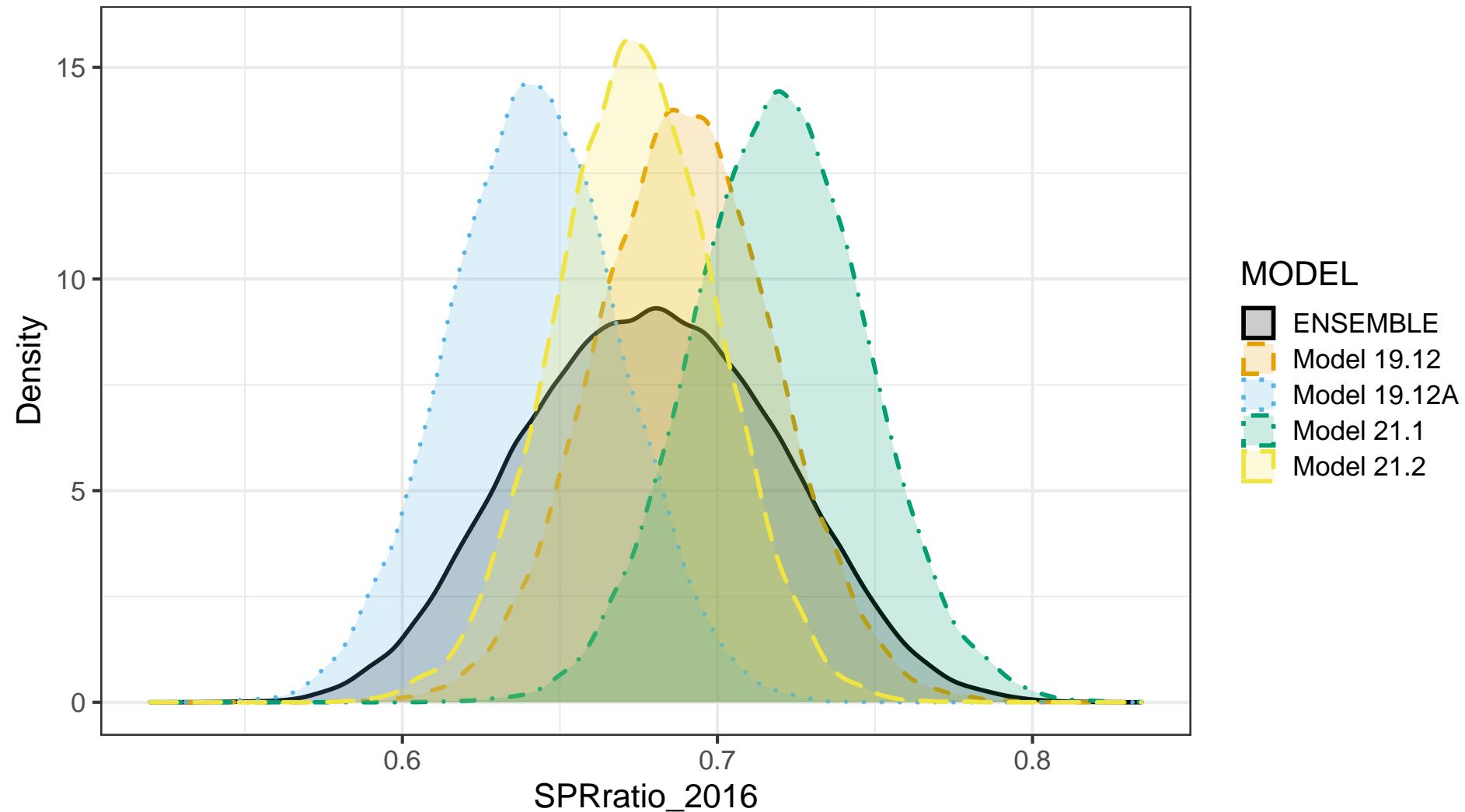
SPRratio_2014



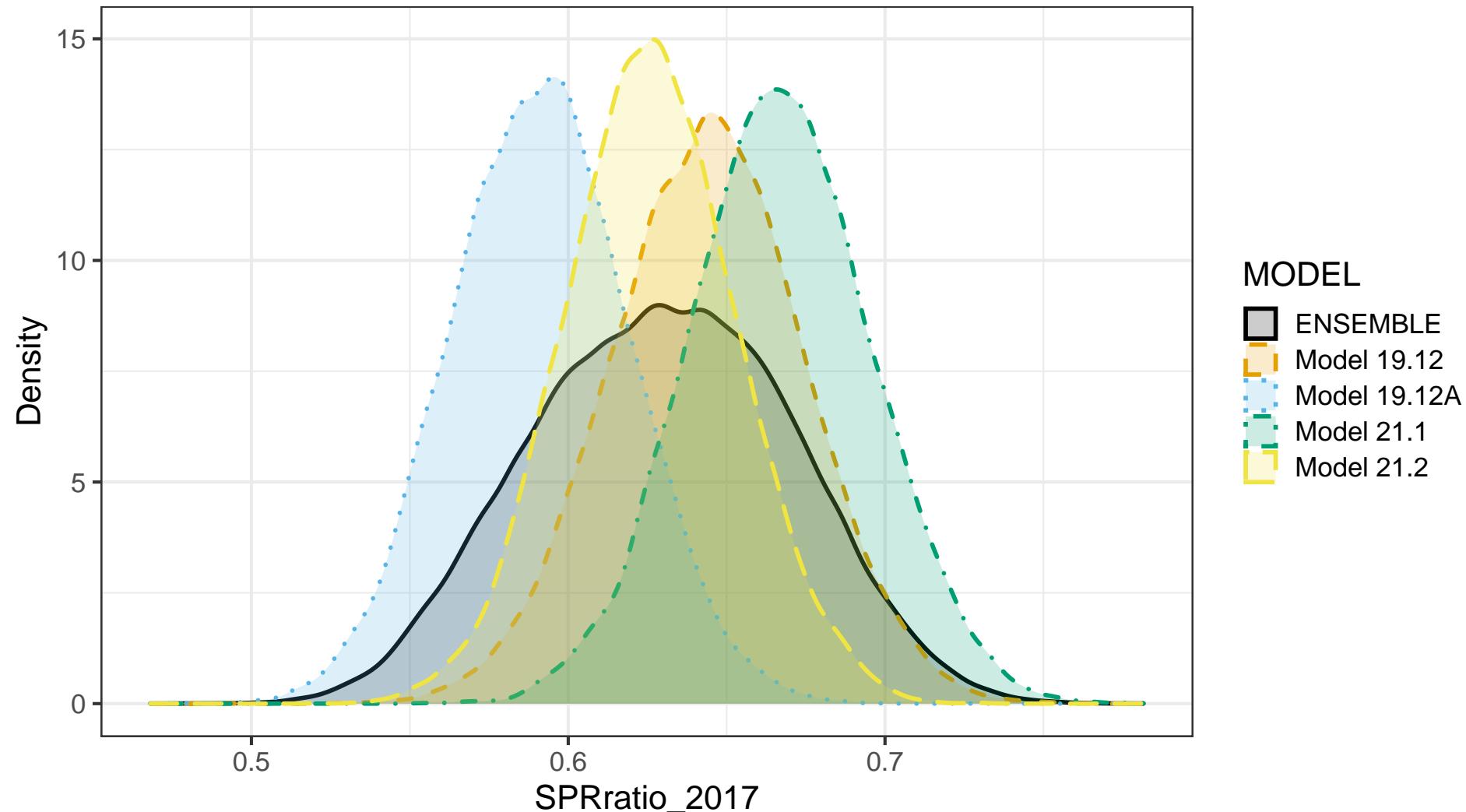
SPRratio_2015



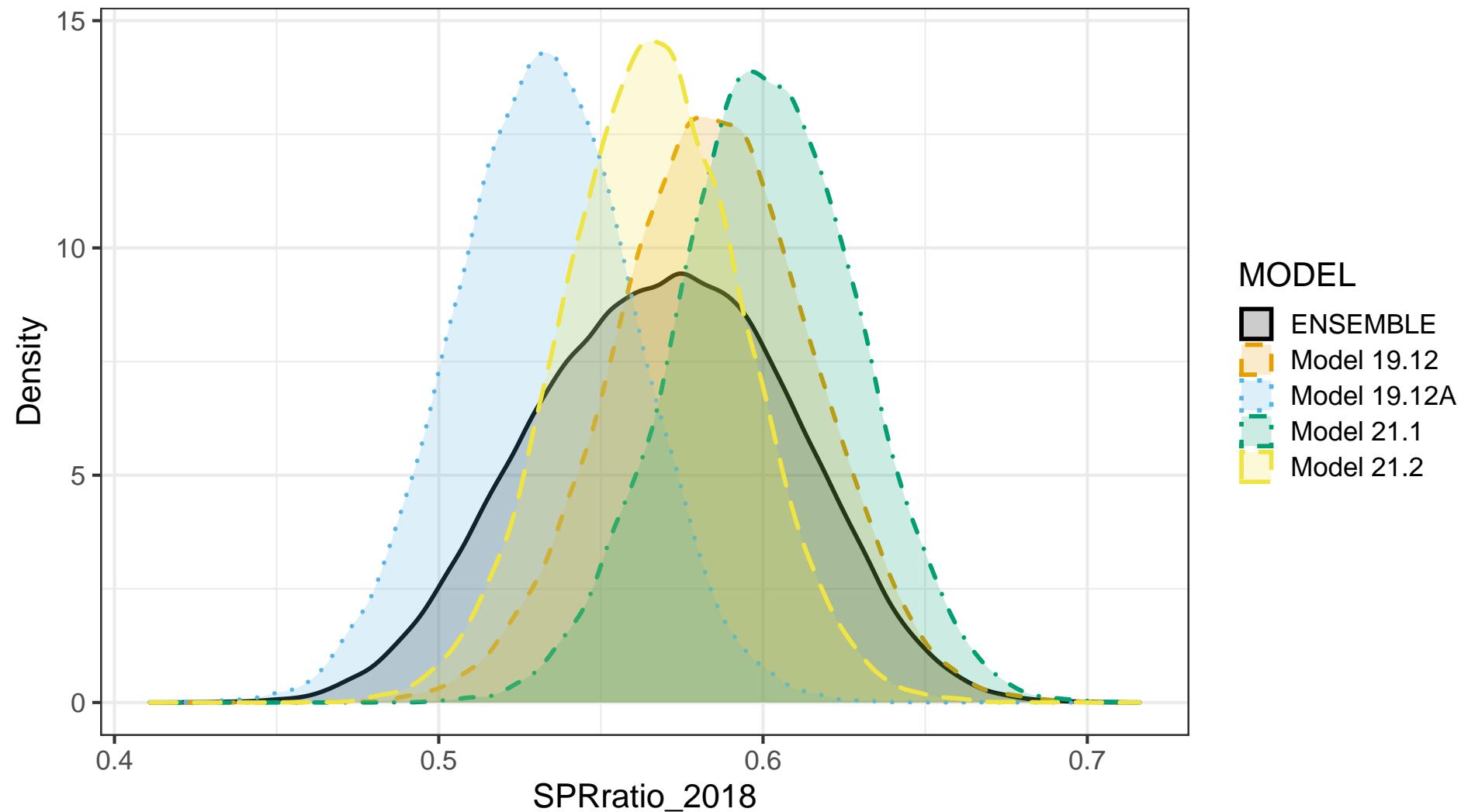
SPRratio_2016



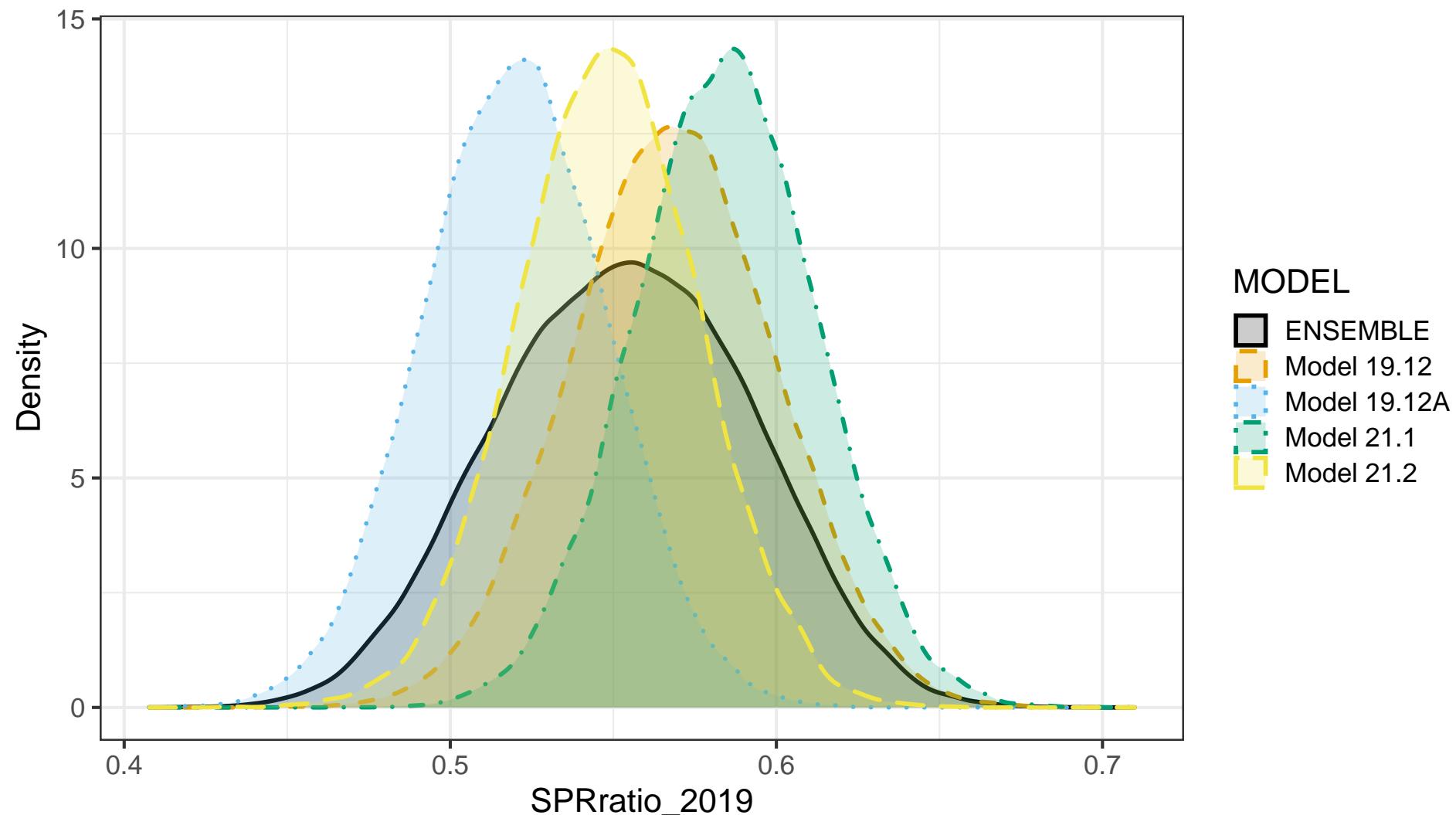
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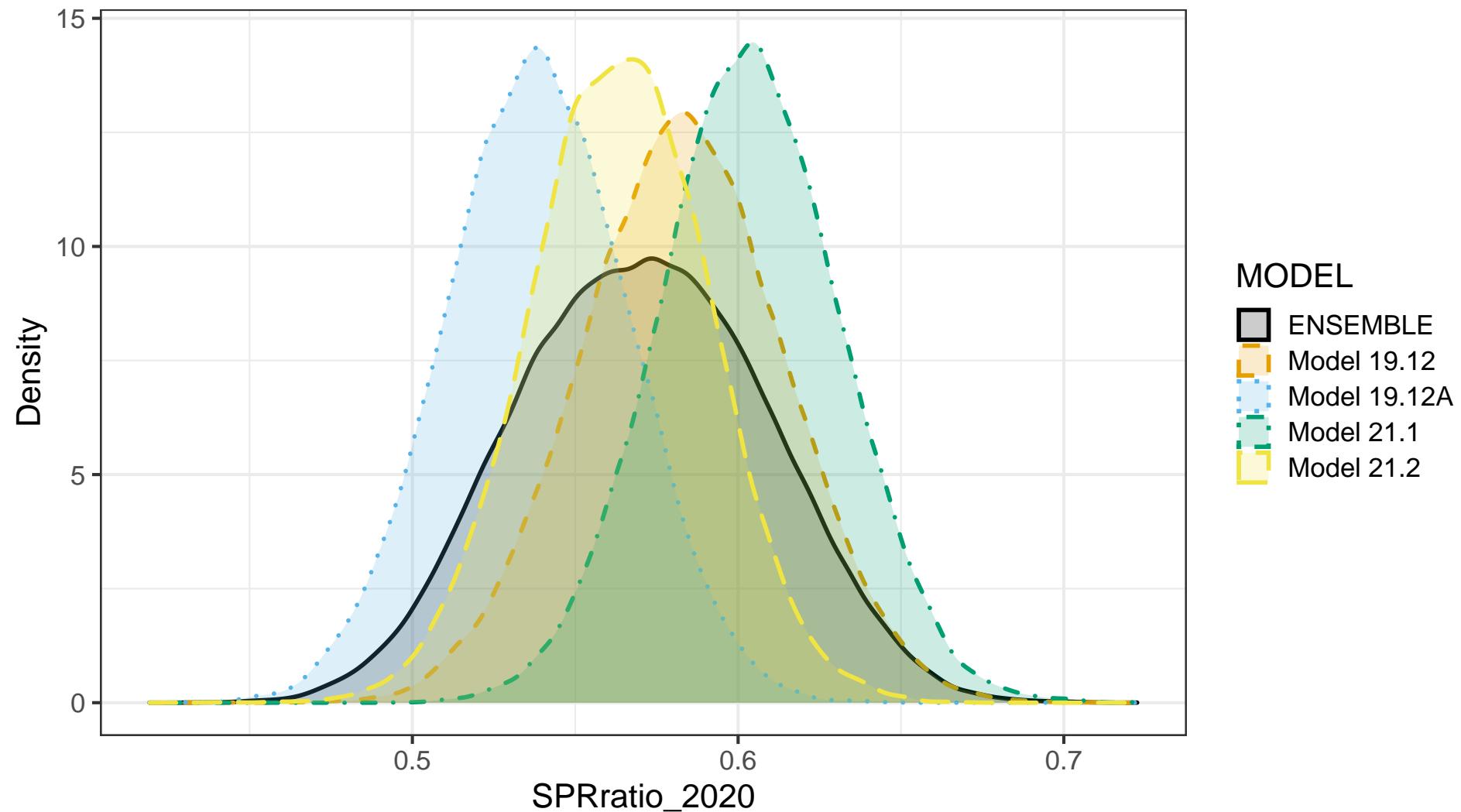
SPRratio_2018



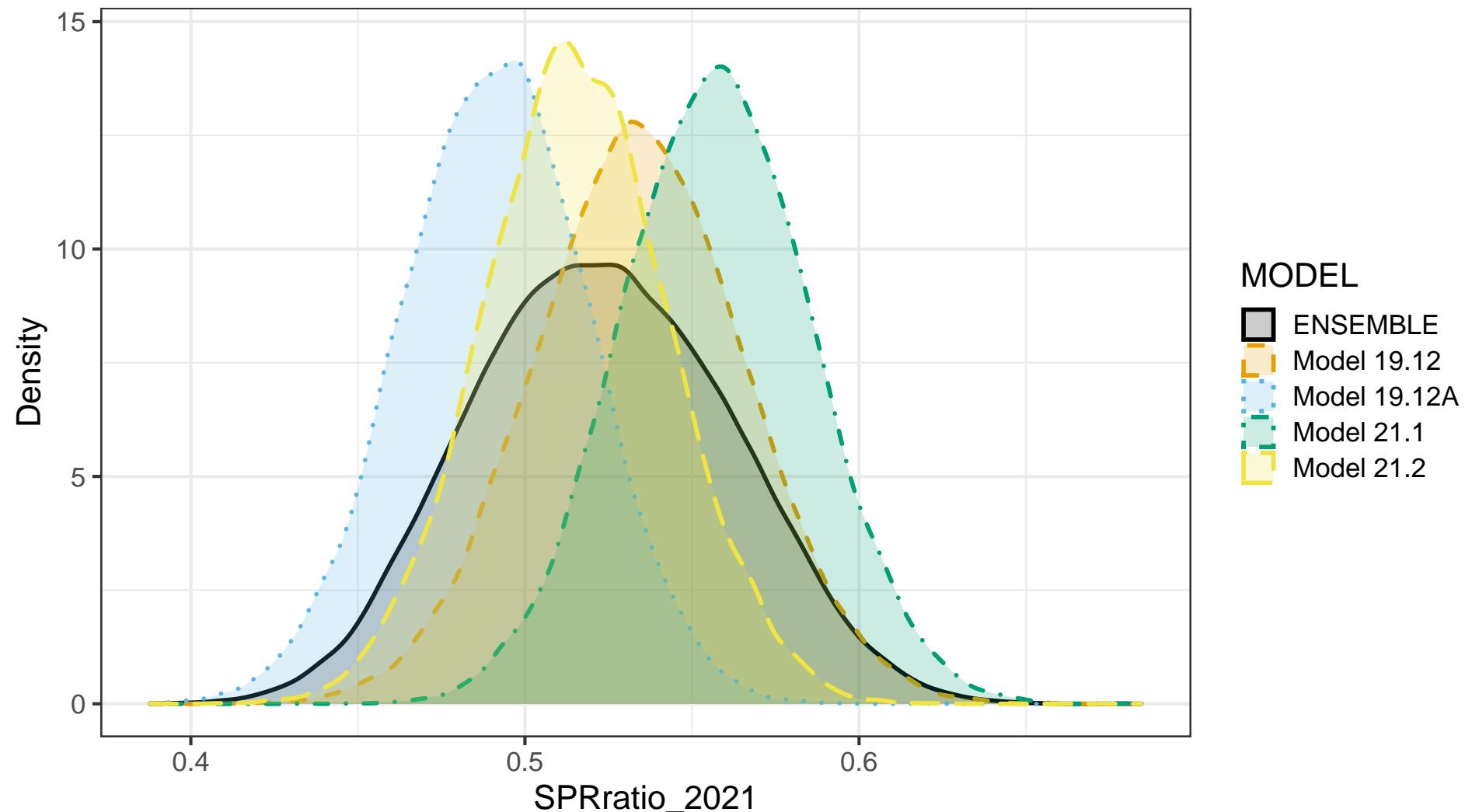
SPRratio_2019



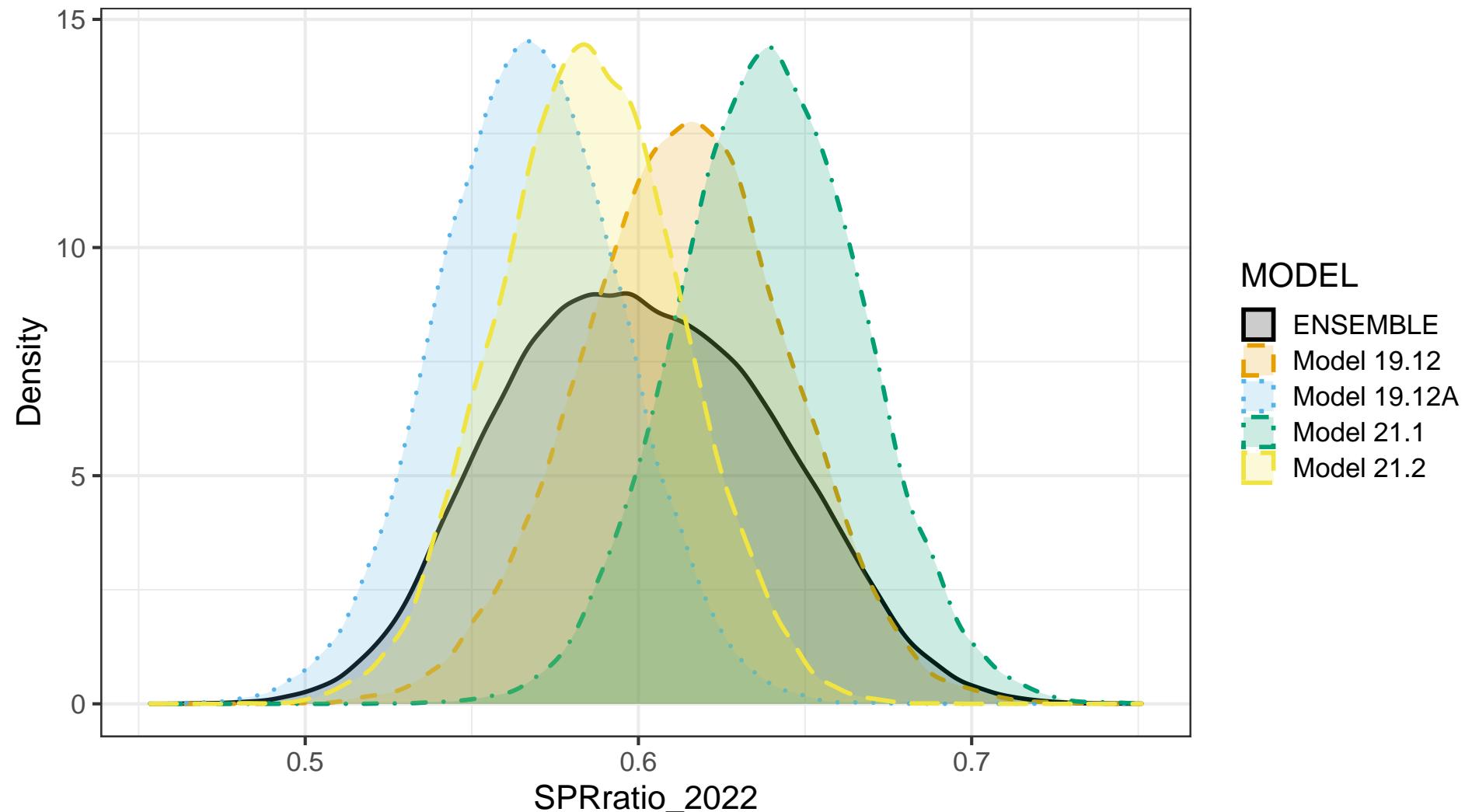
SPRratio_2020



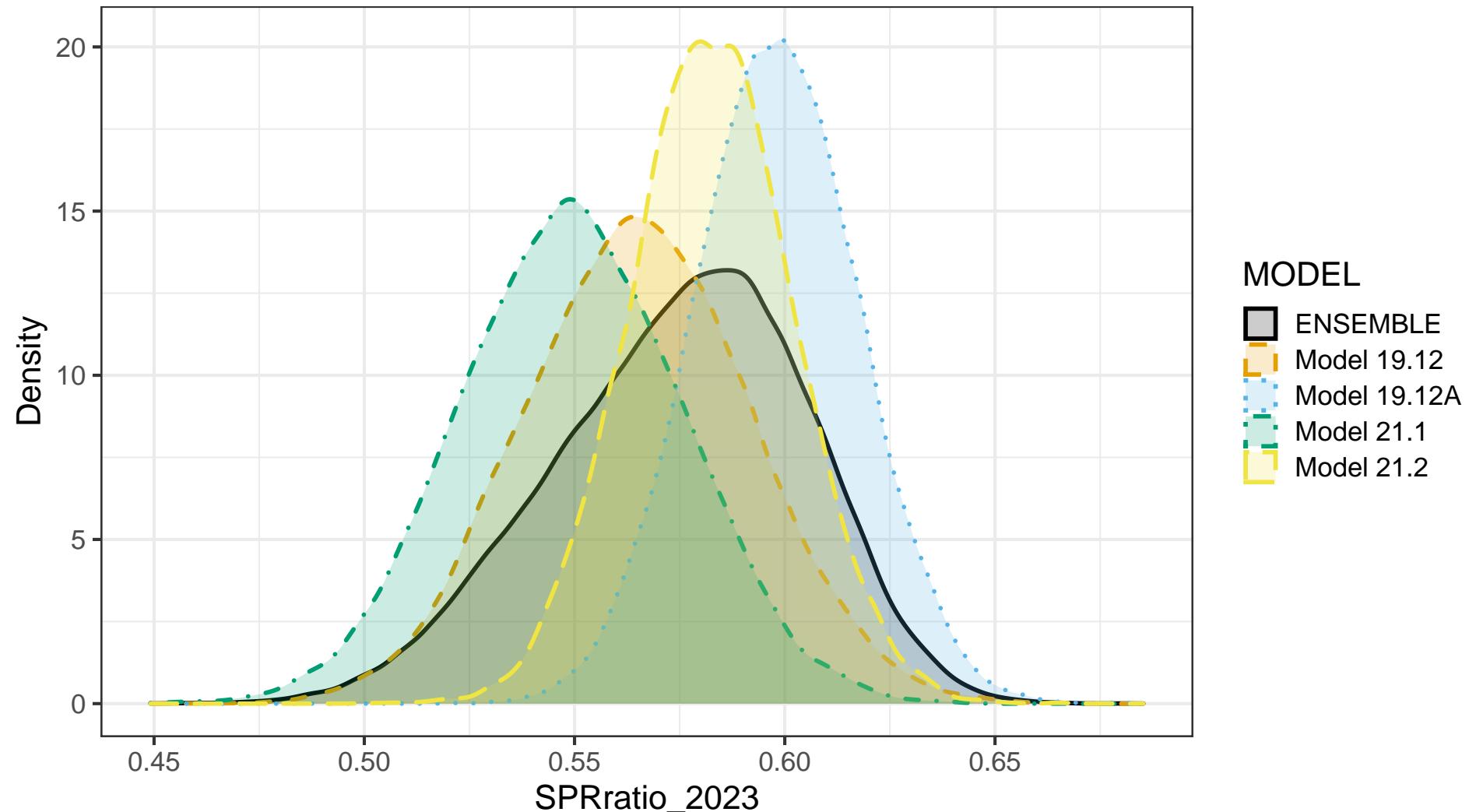
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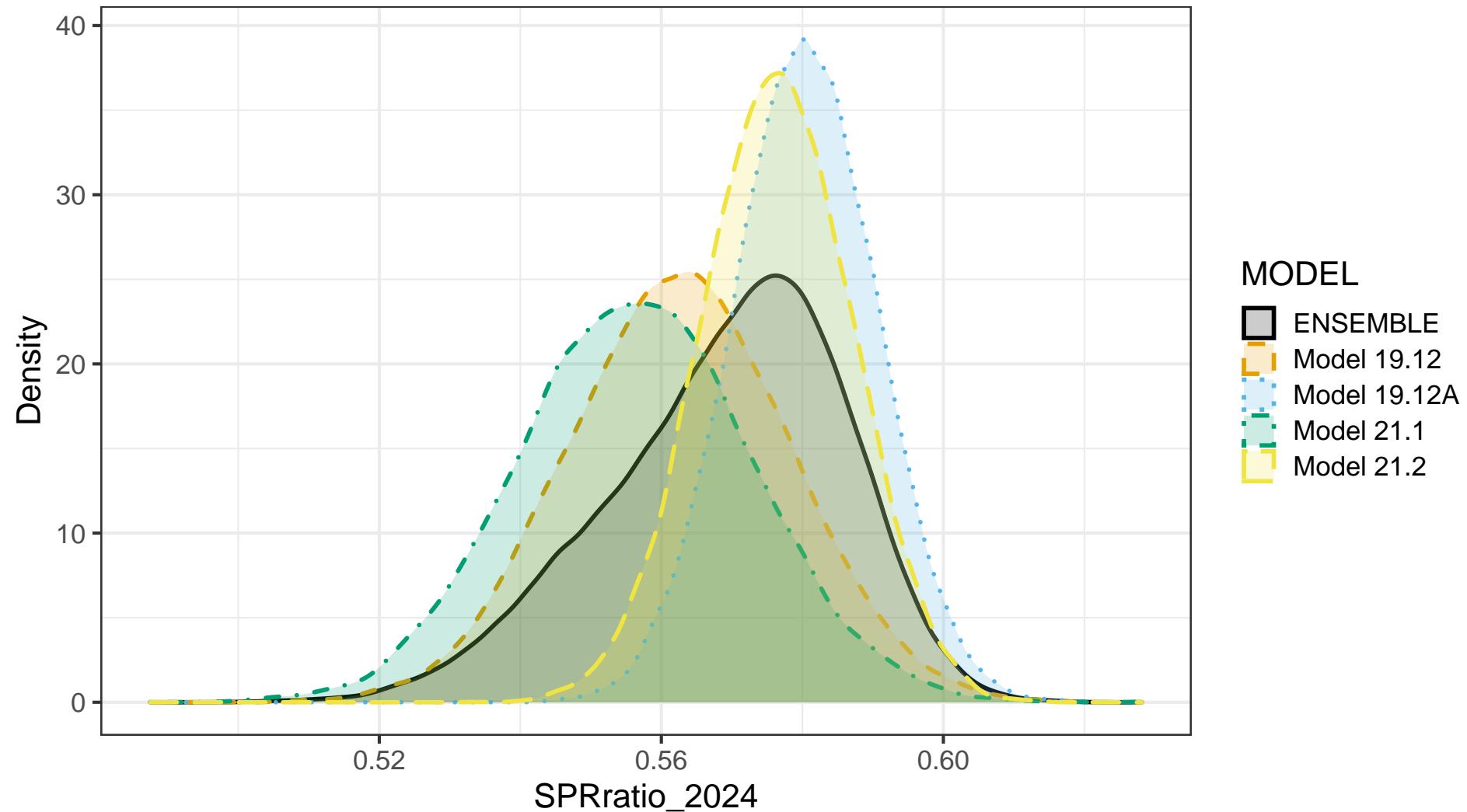
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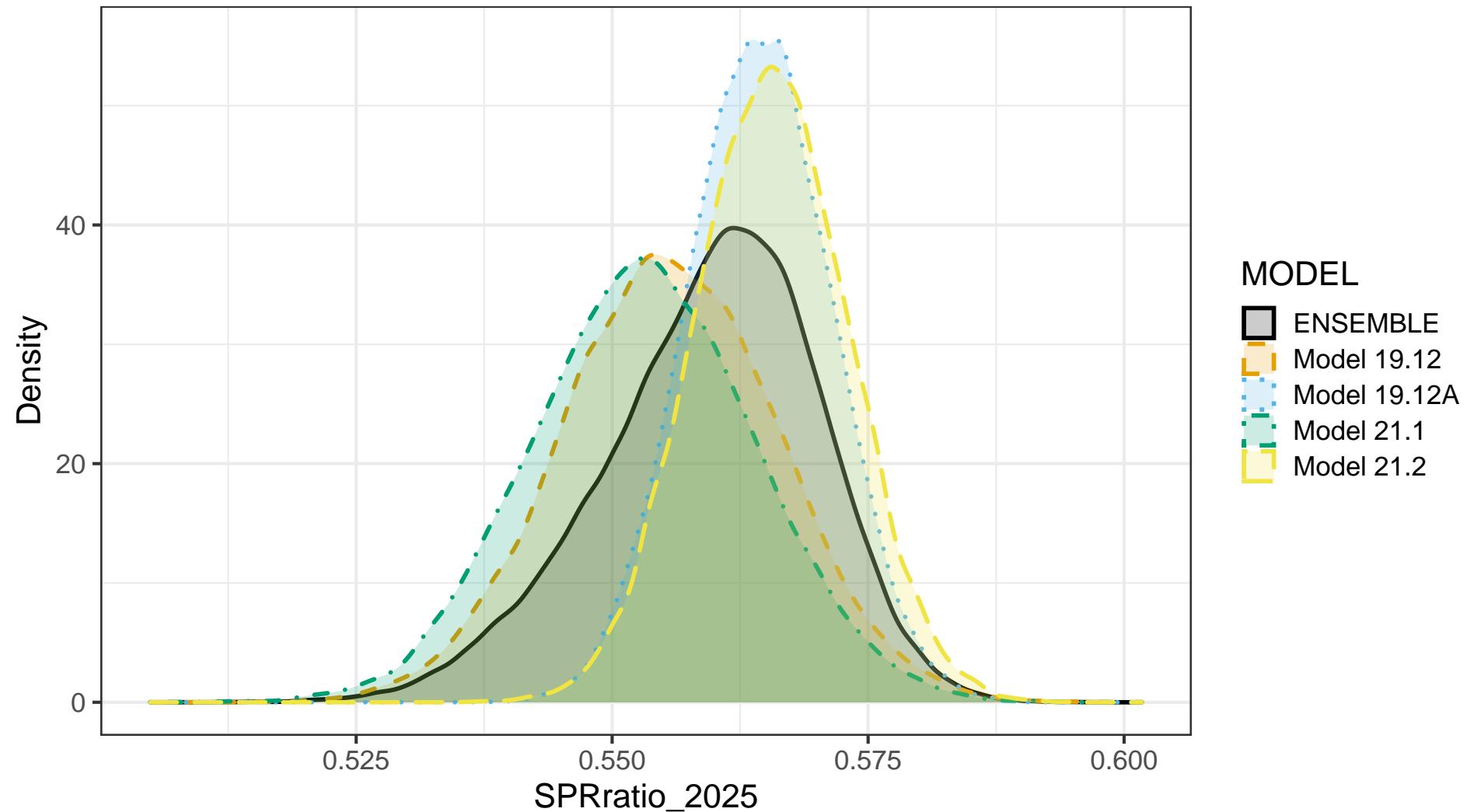
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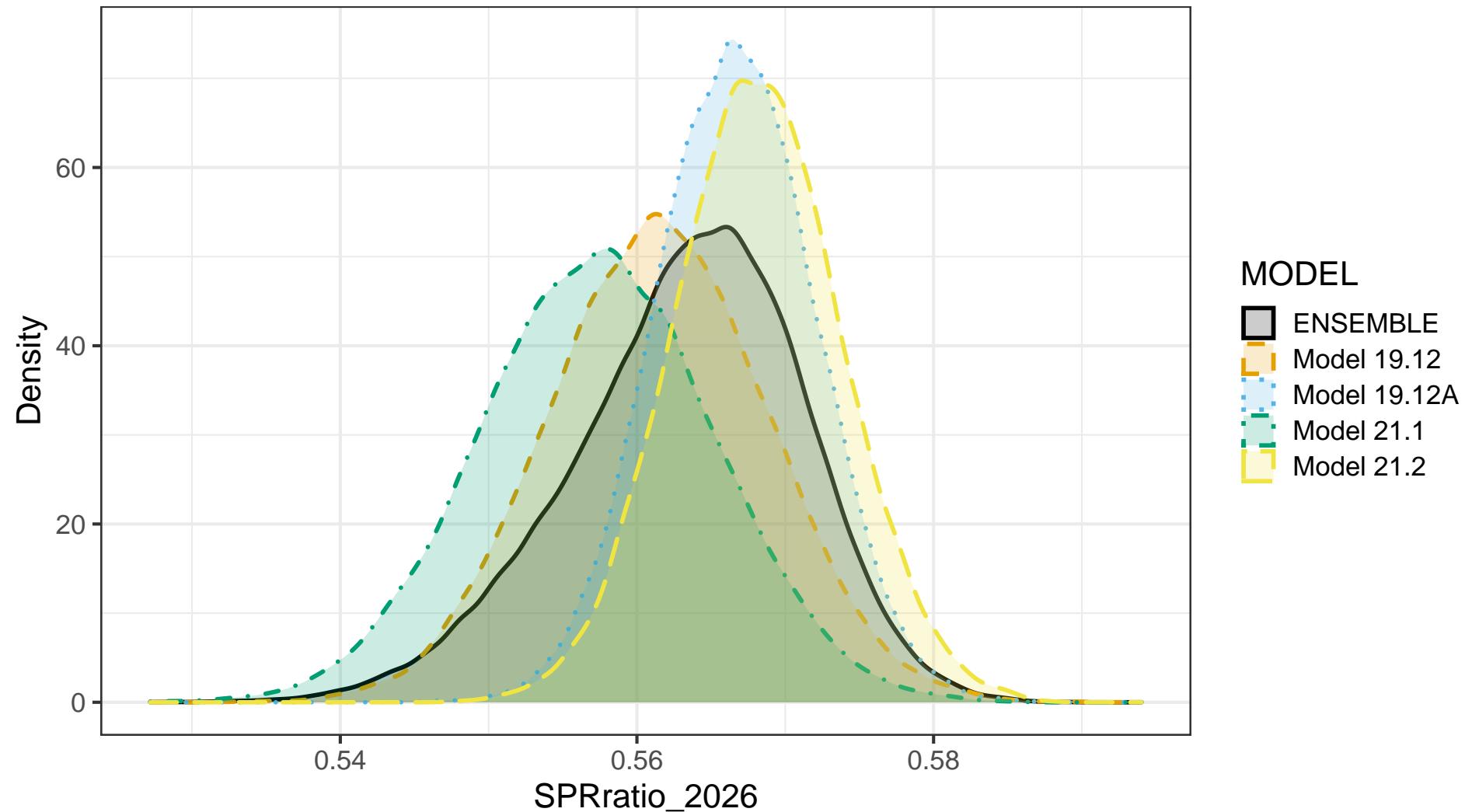
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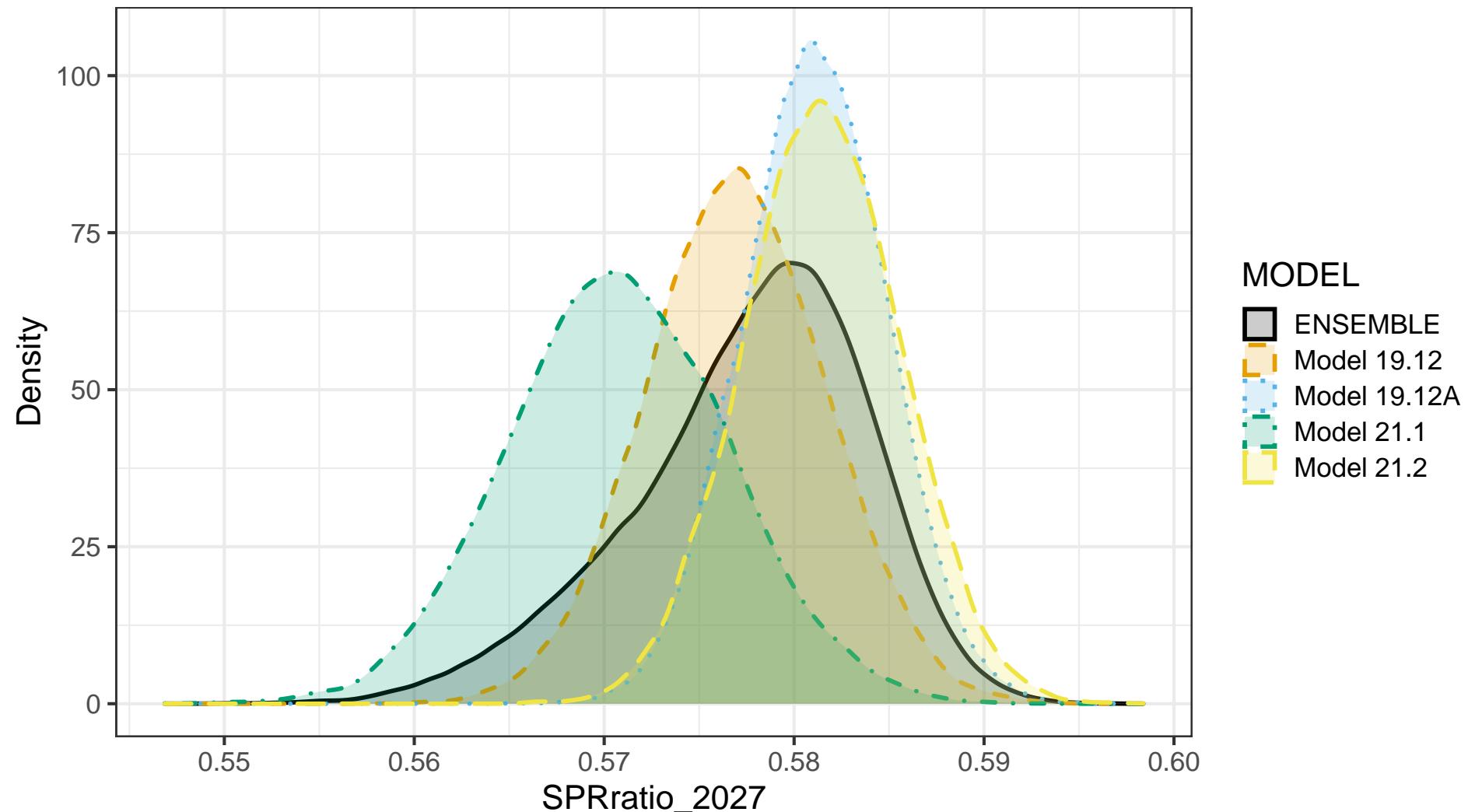
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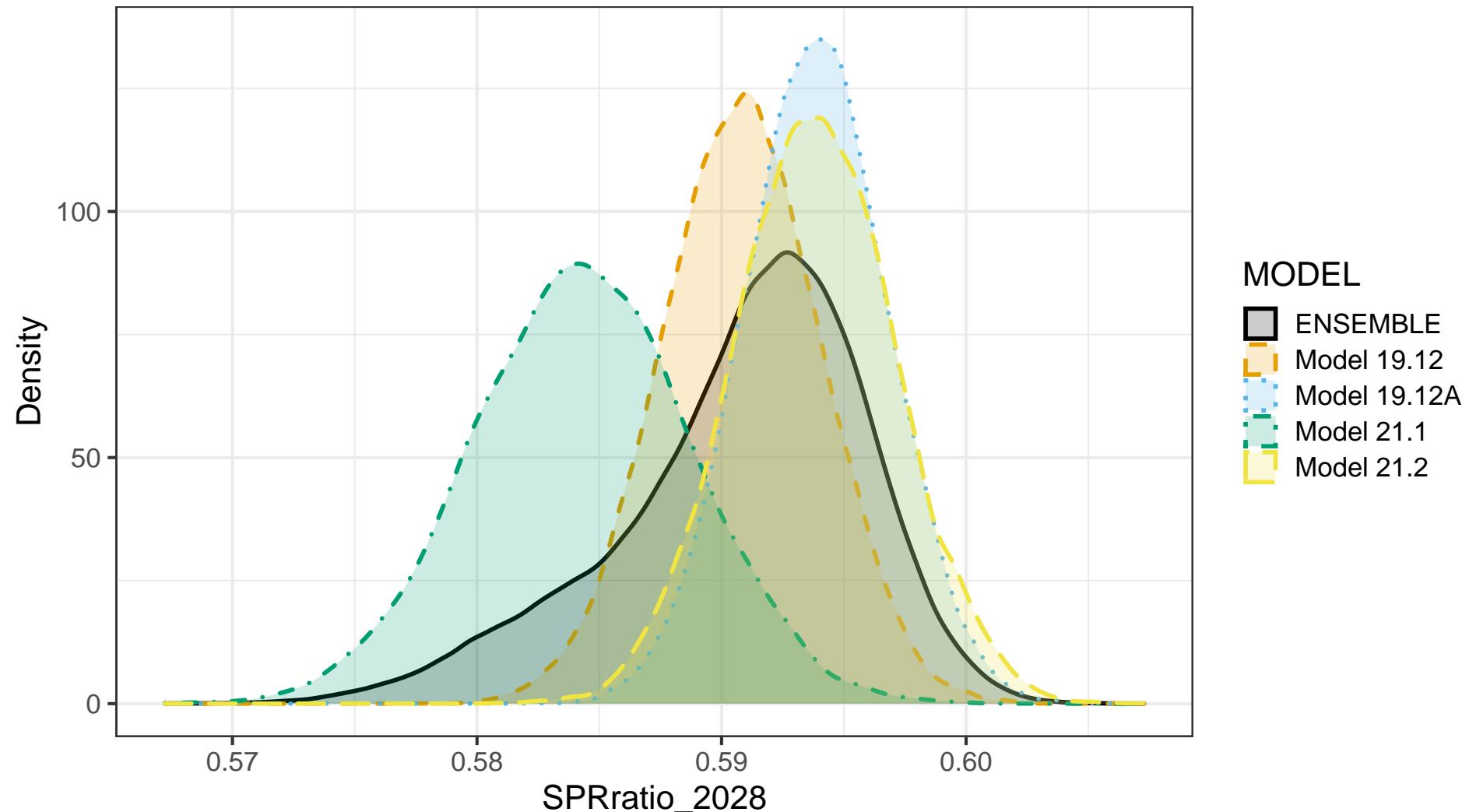
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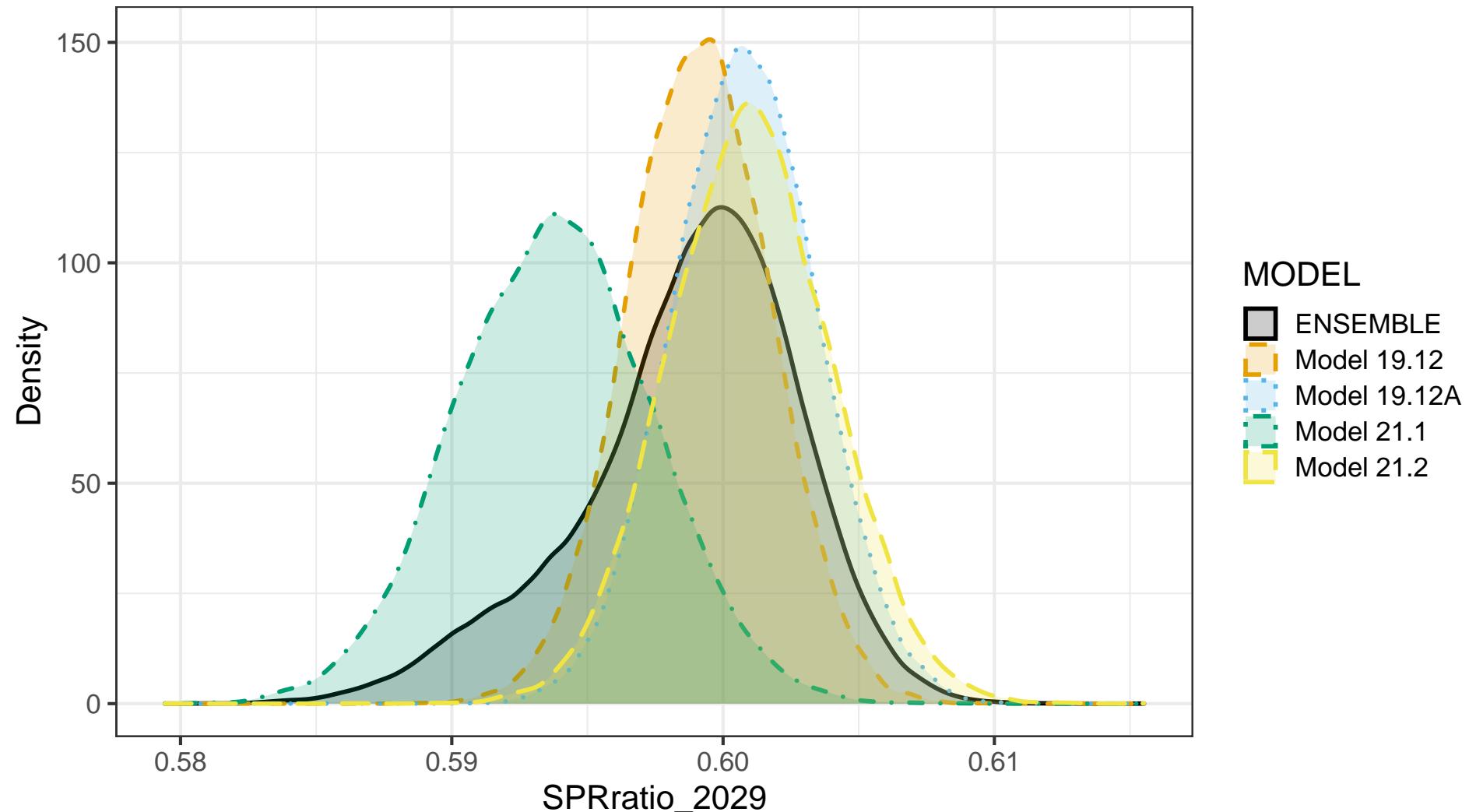
SPRratio_2027



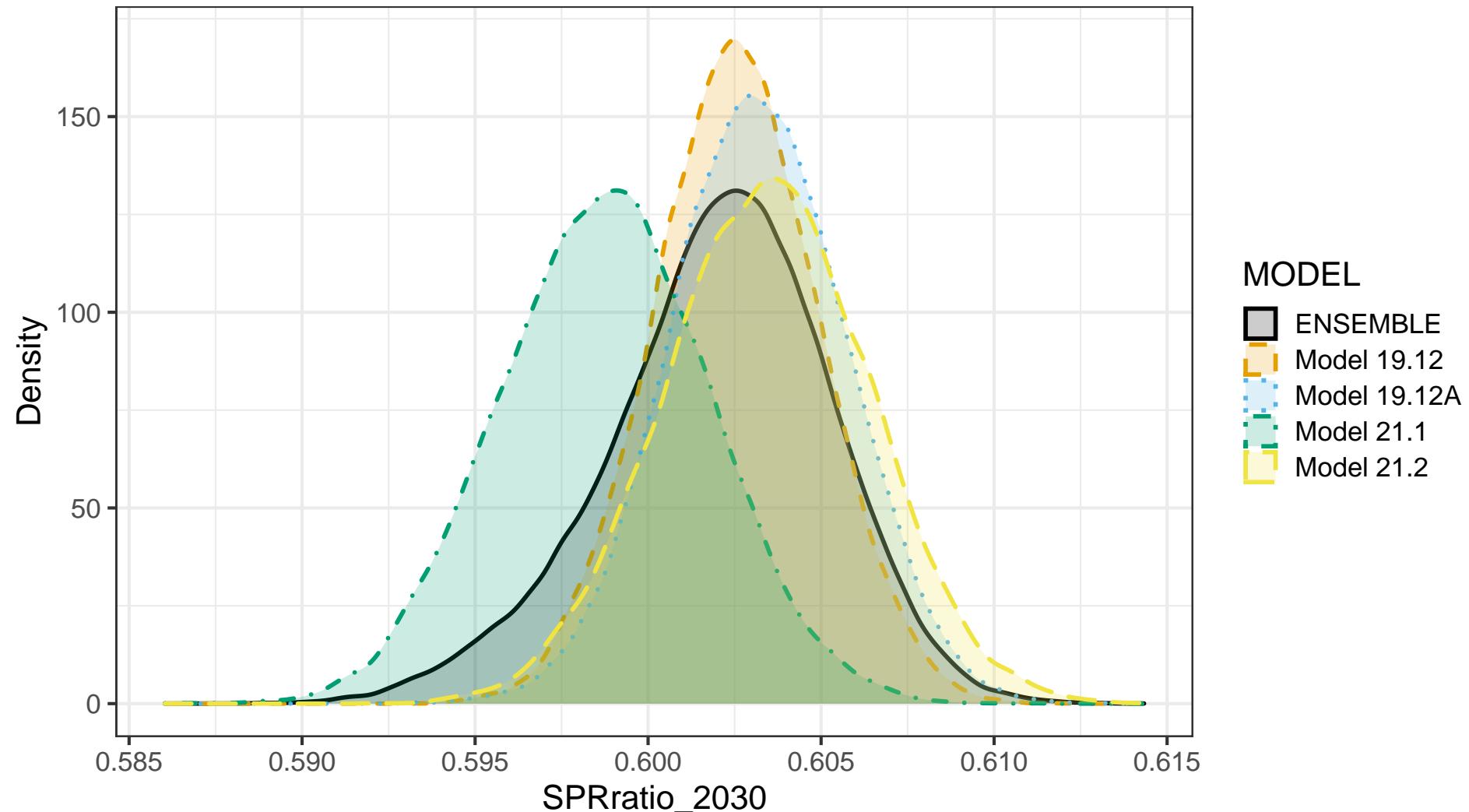
SPRratio_2028



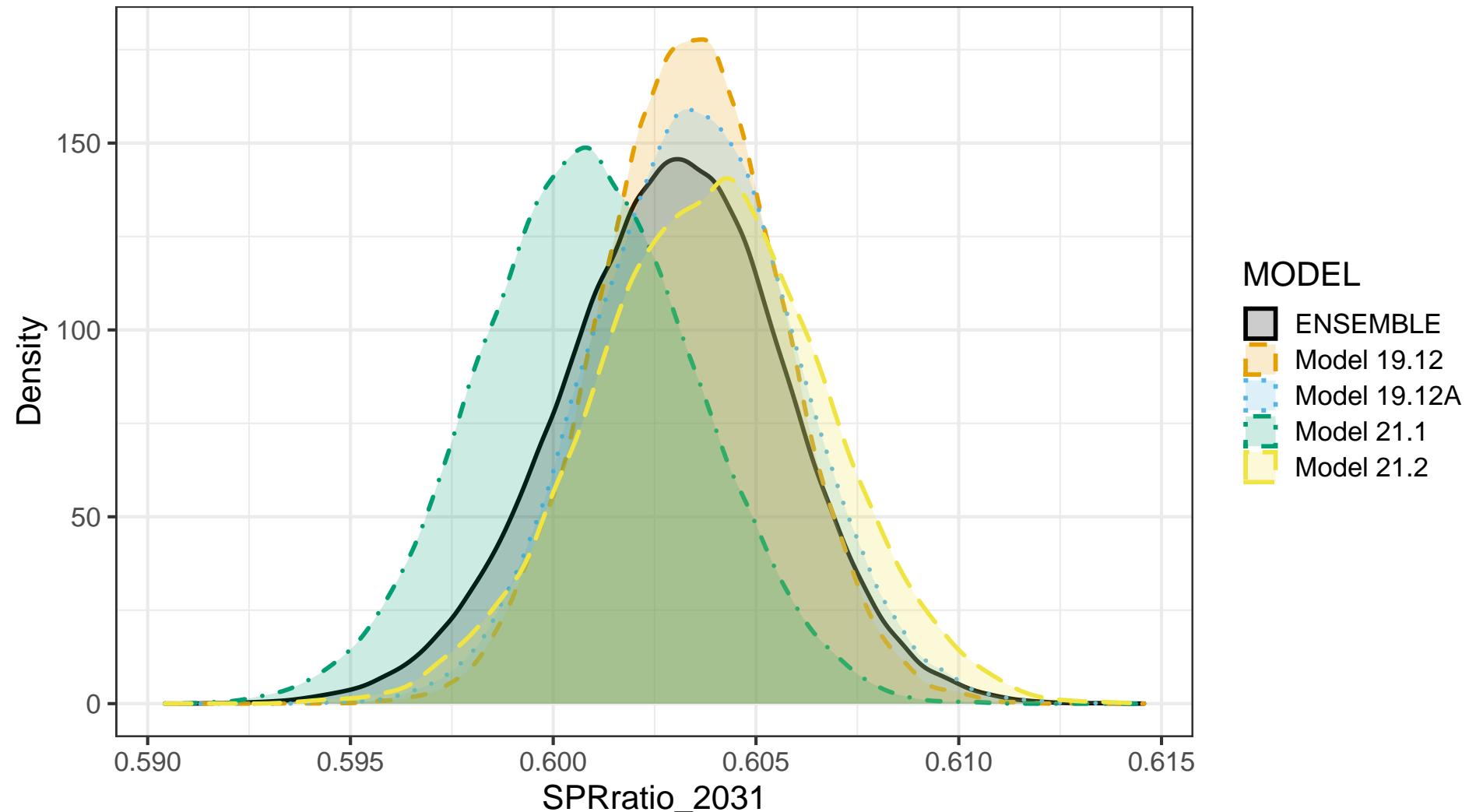
SPRratio_2029



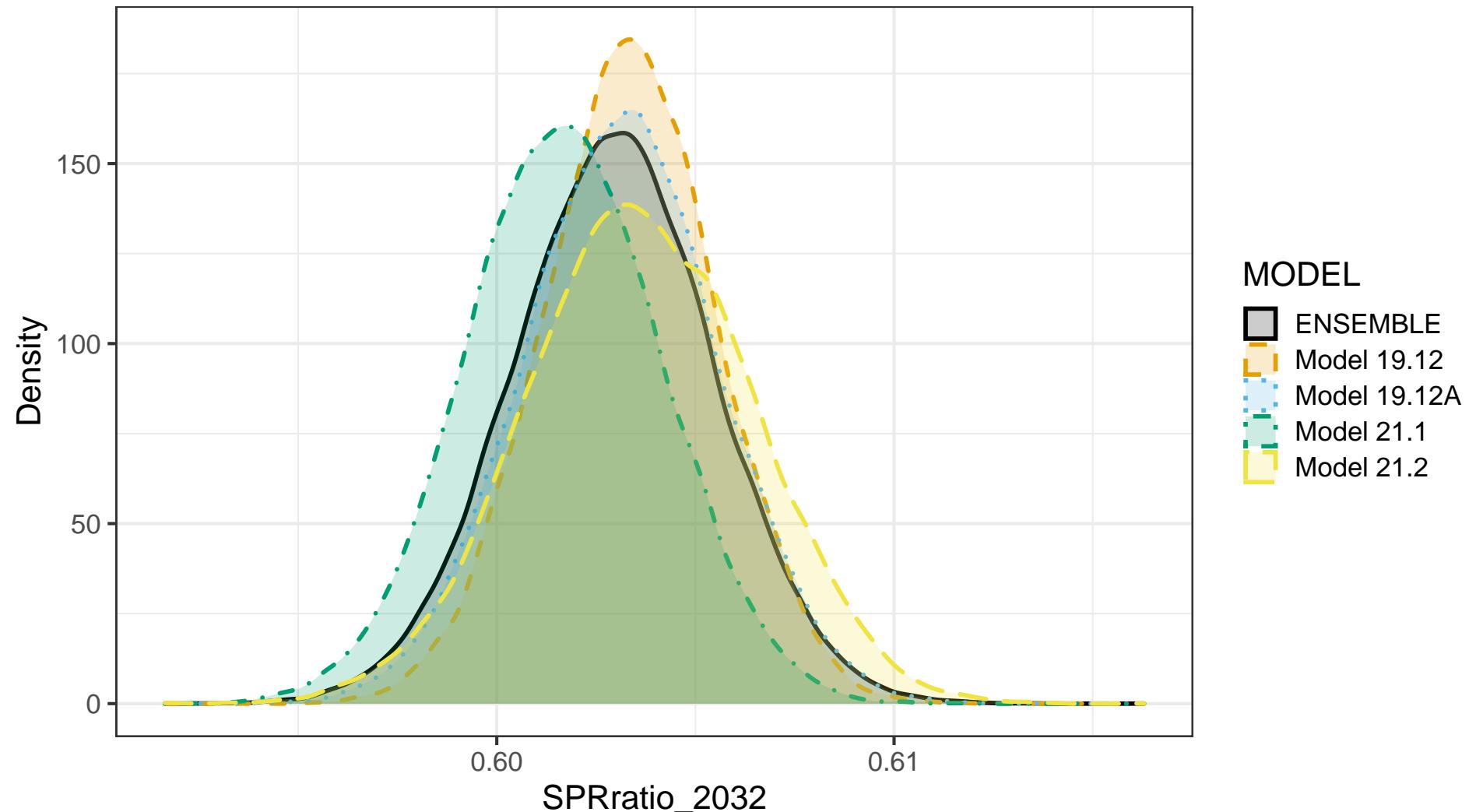
SPRratio_2030



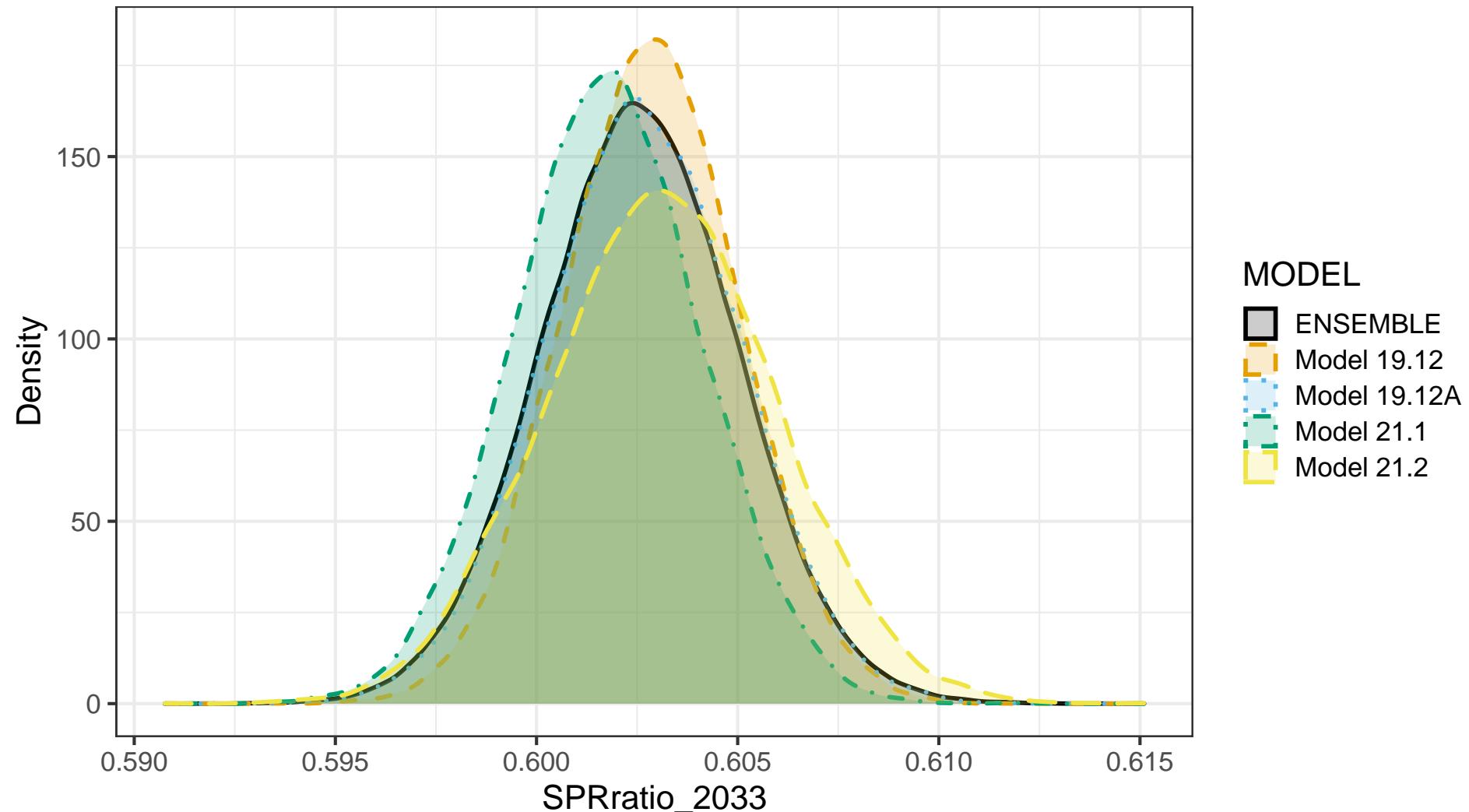
SPRratio_2031



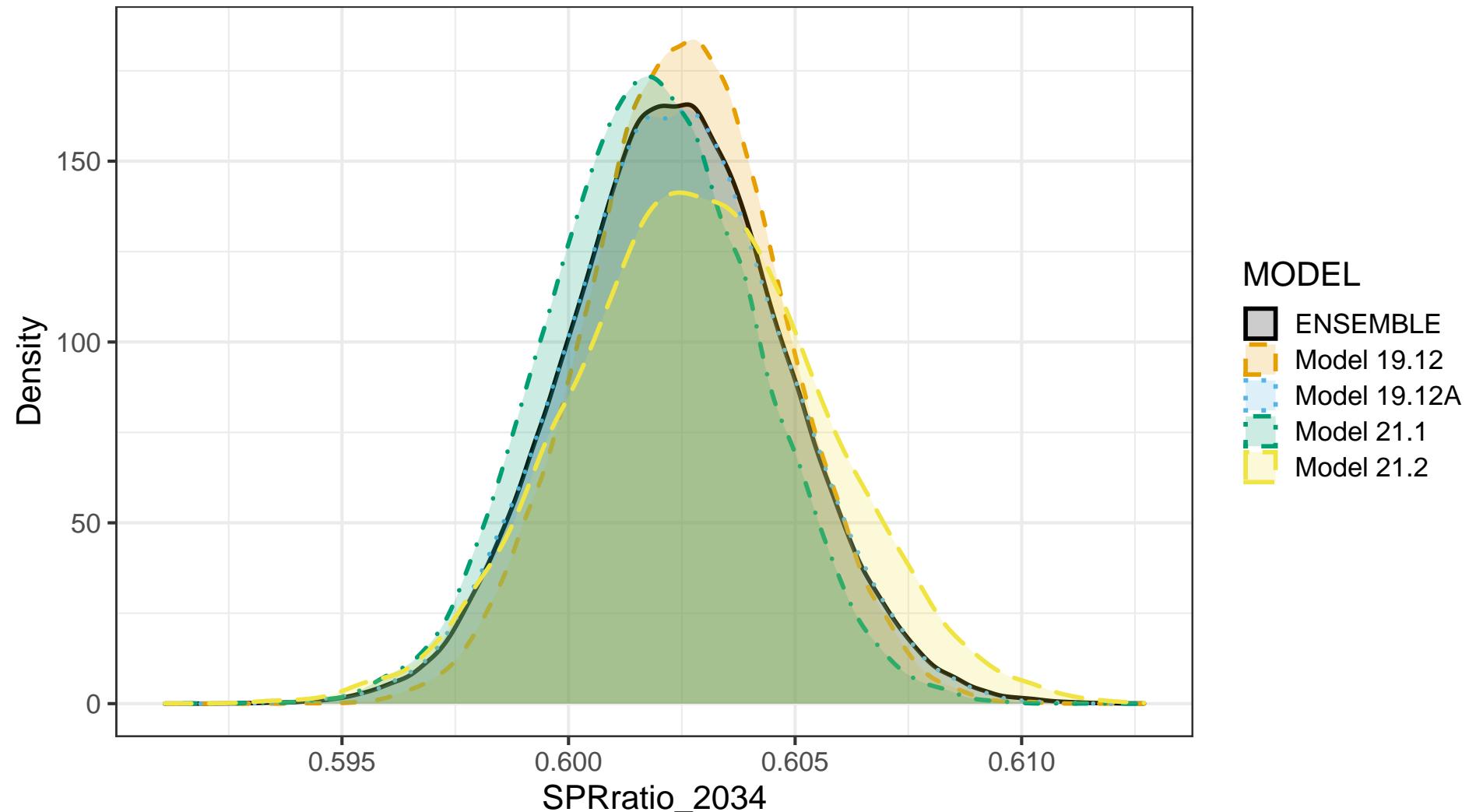
SPRratio_2032



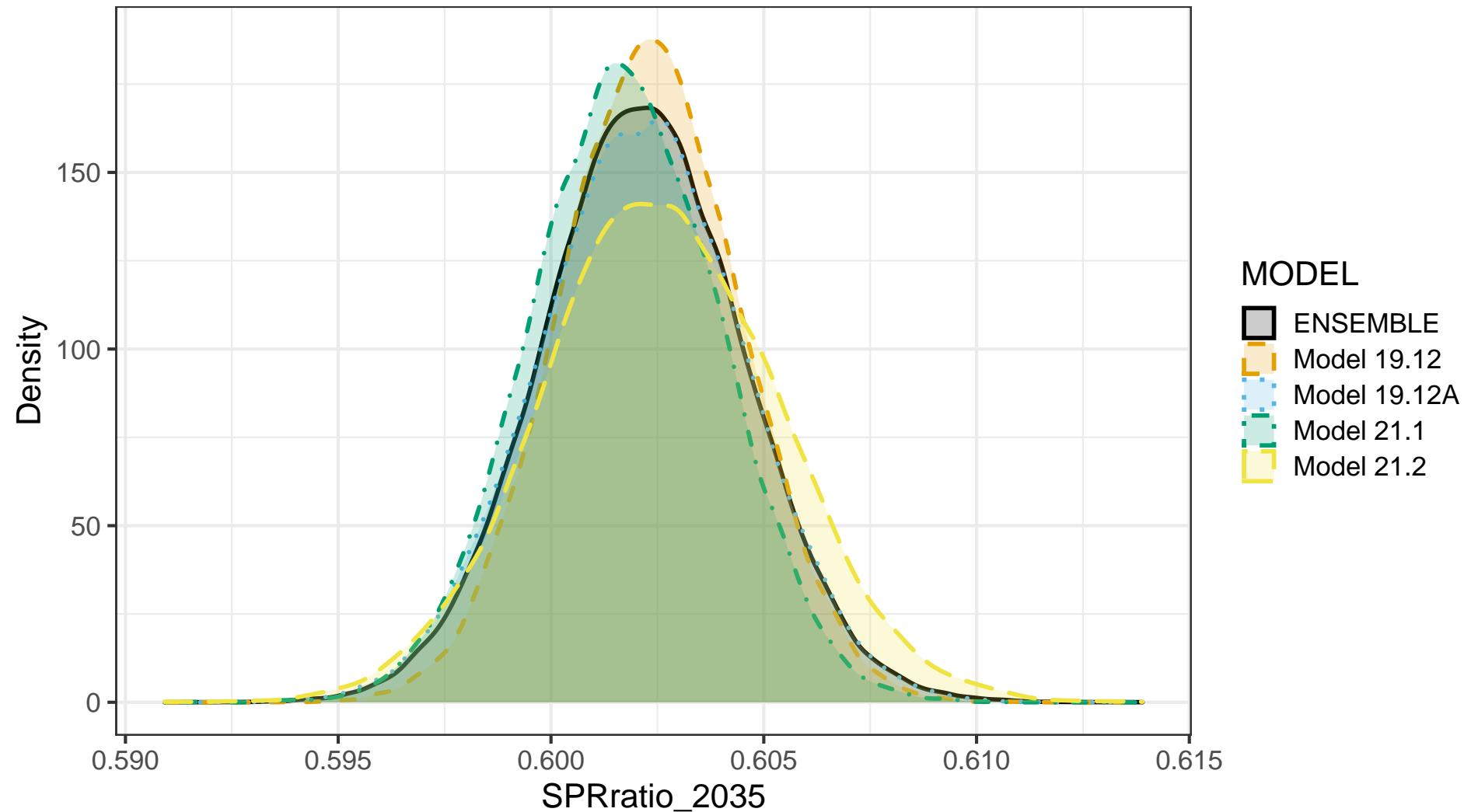
SPRratio_2033



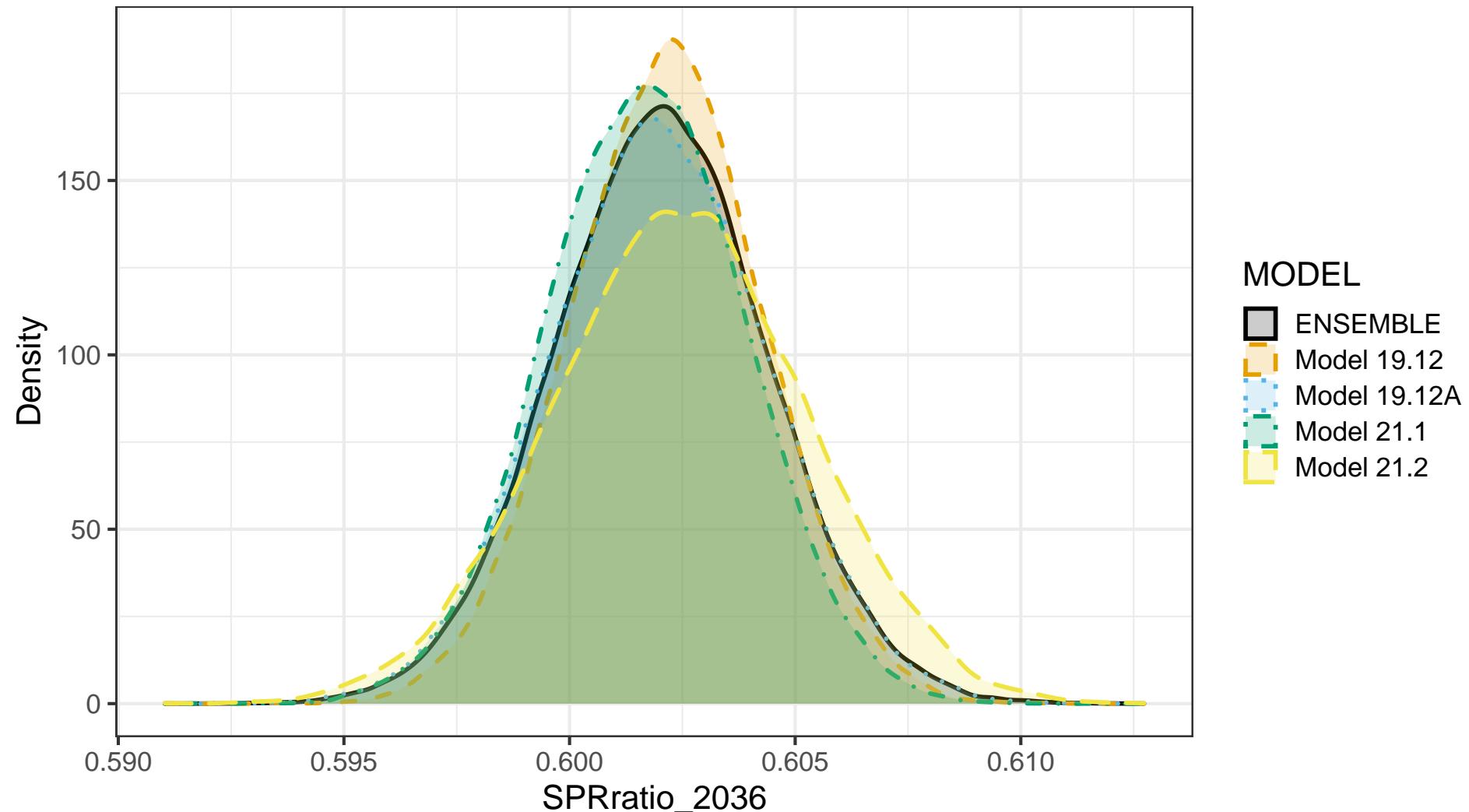
SPRratio_2034



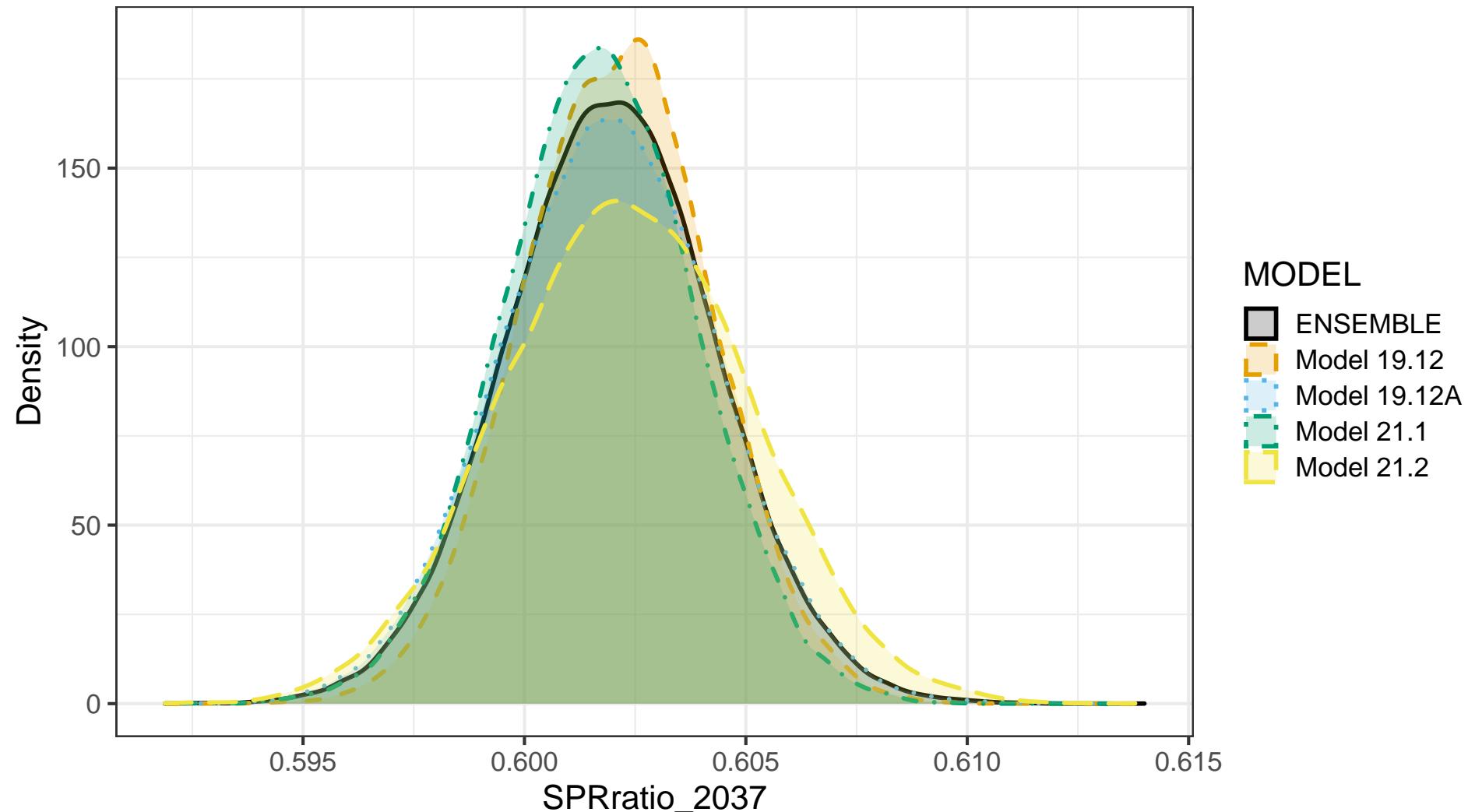
SPRratio_2035



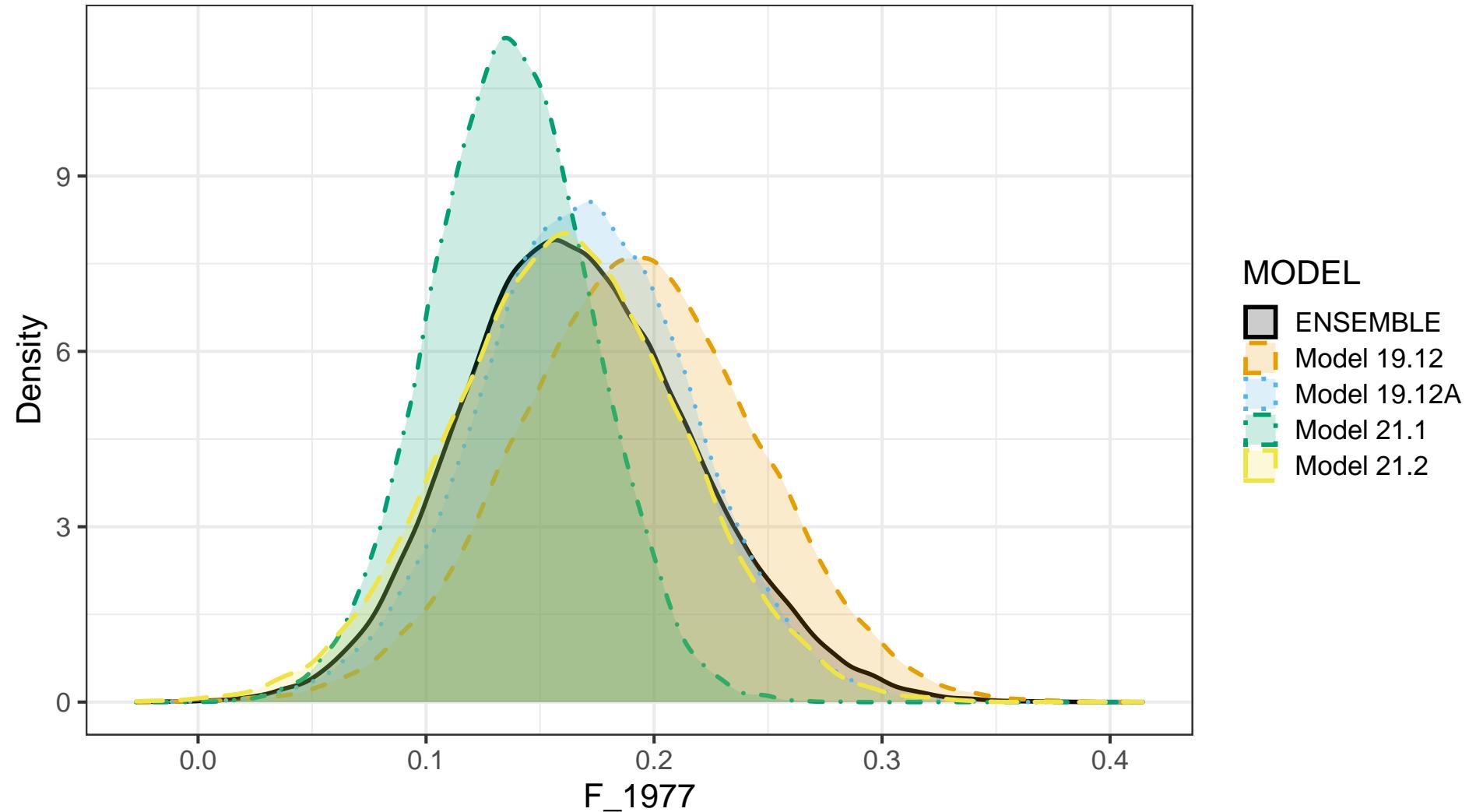
SPRratio_2036



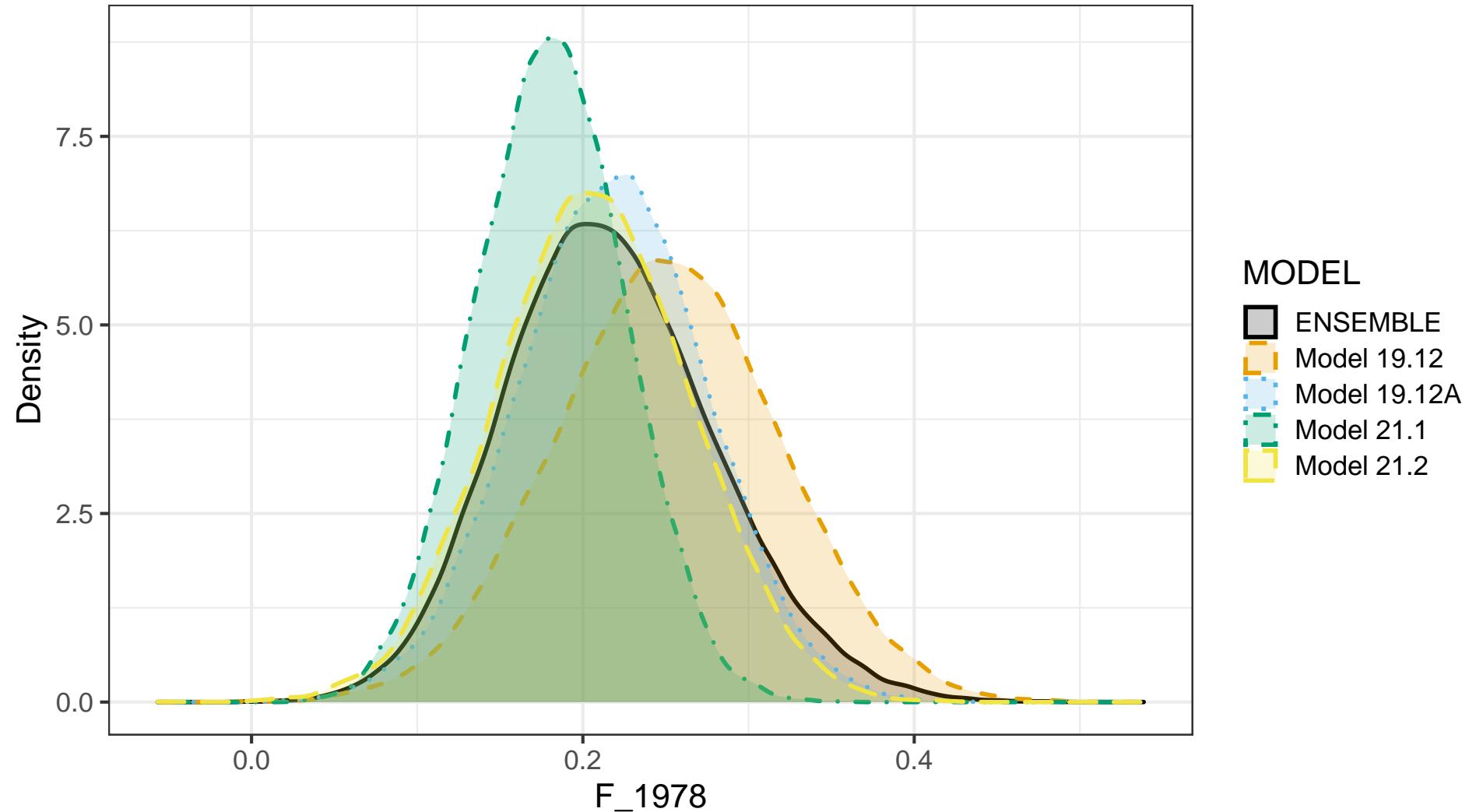
SPRratio_2037



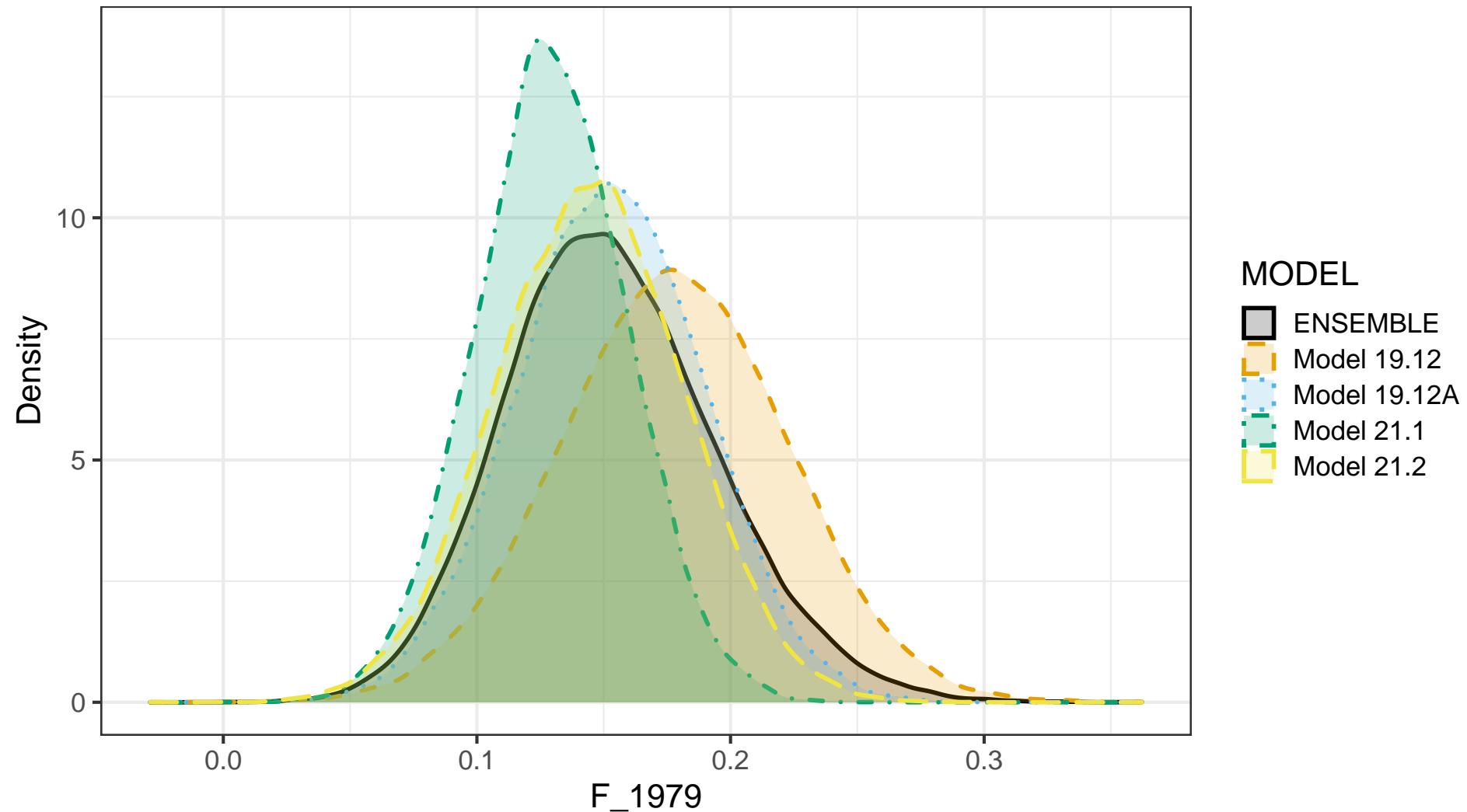
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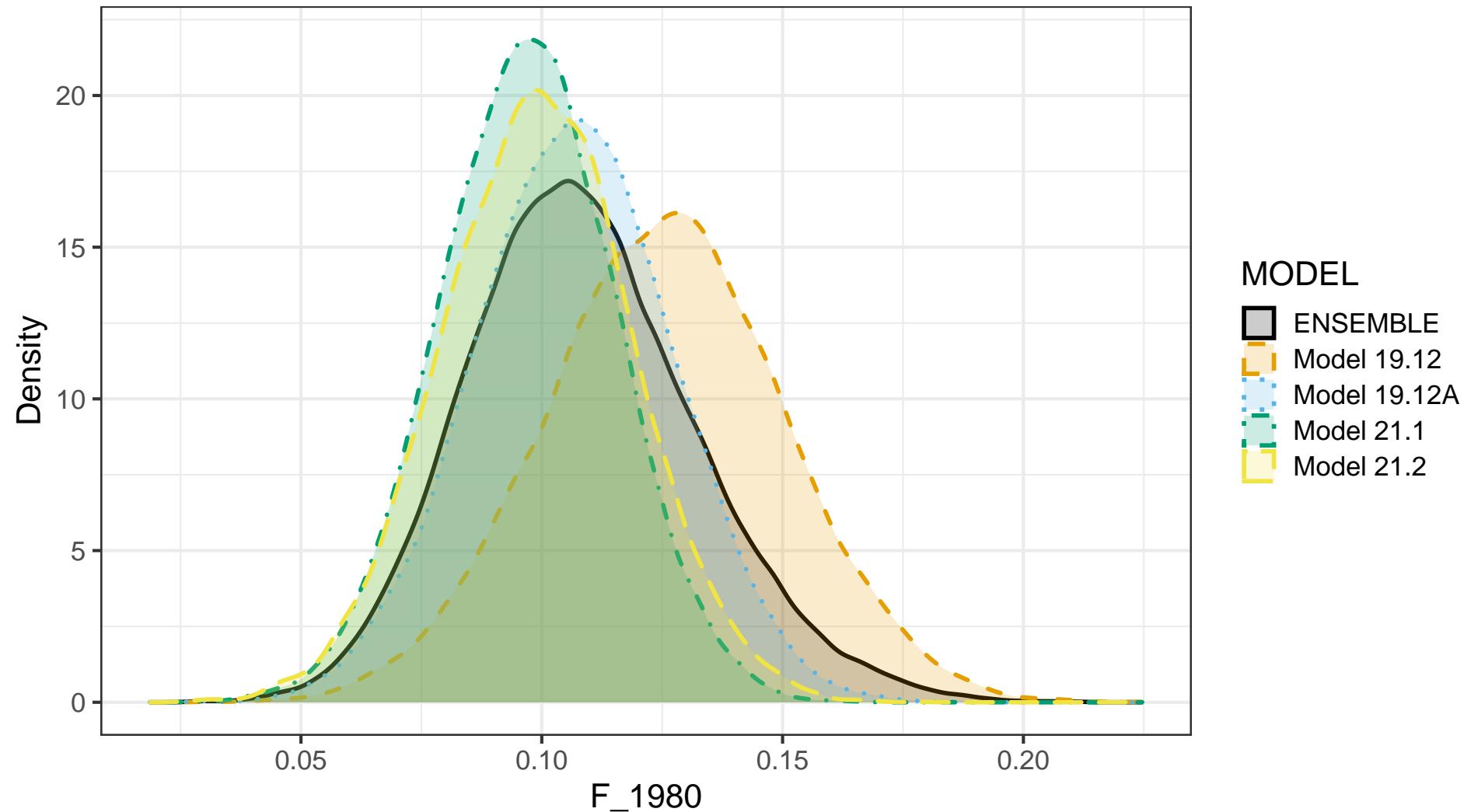
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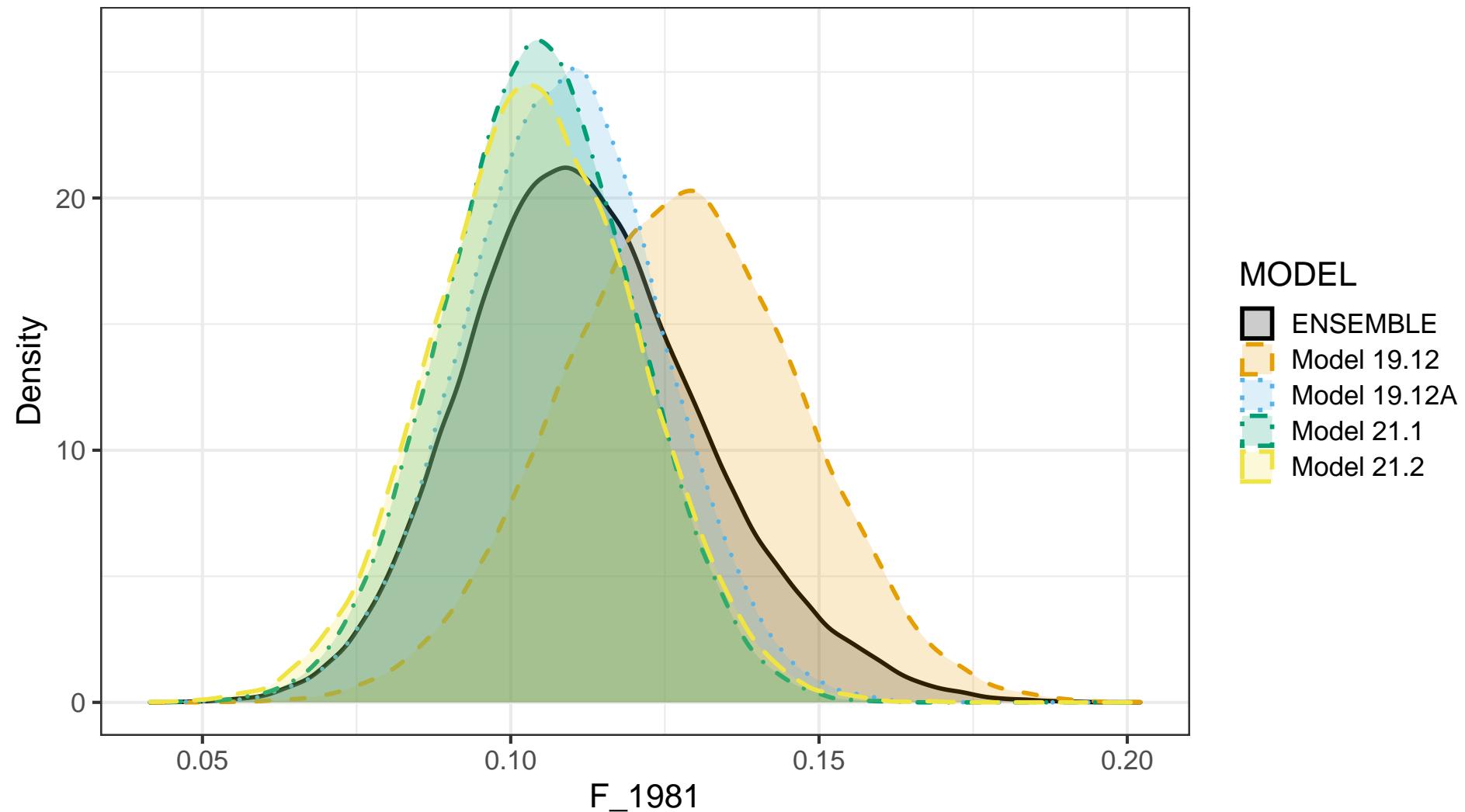
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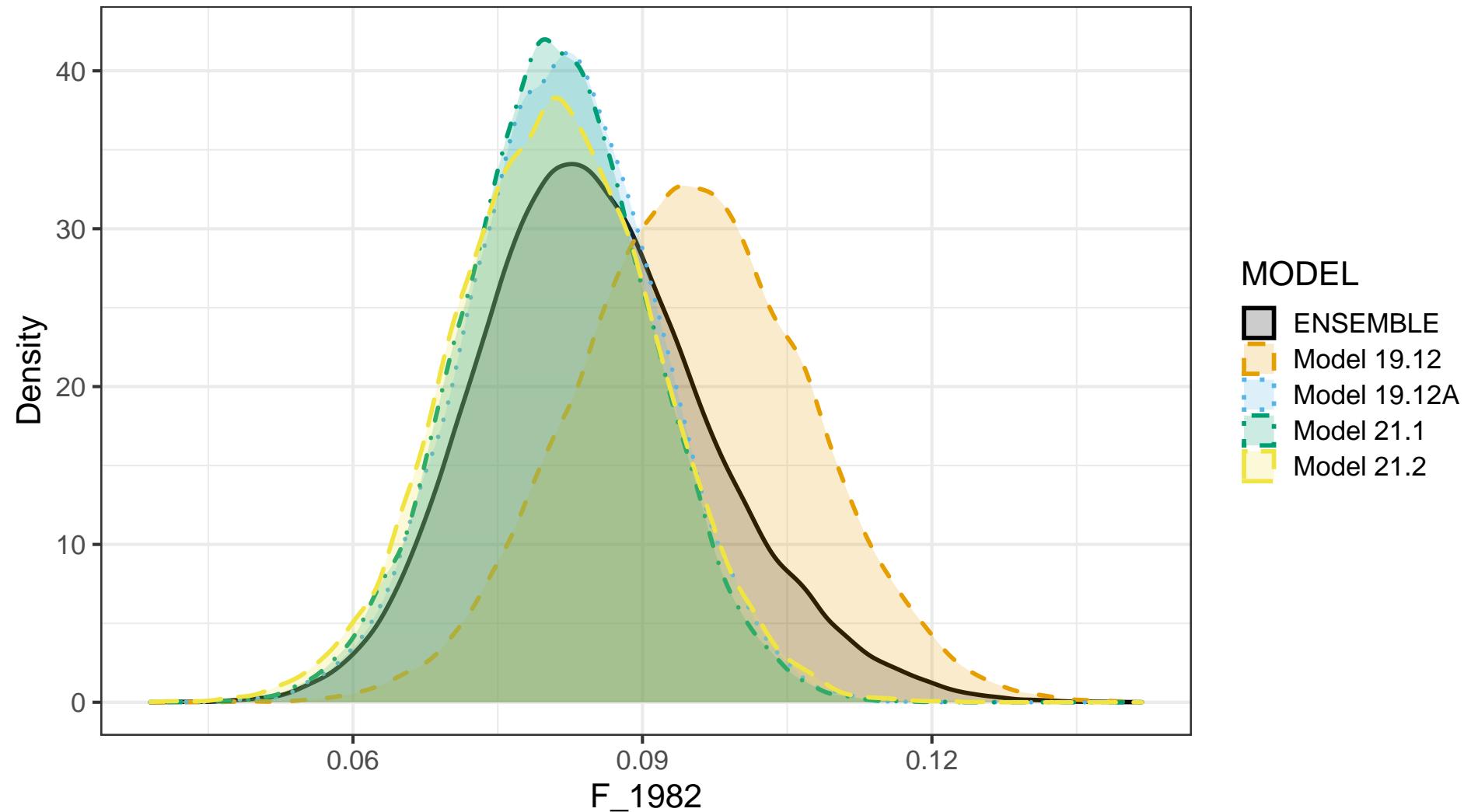
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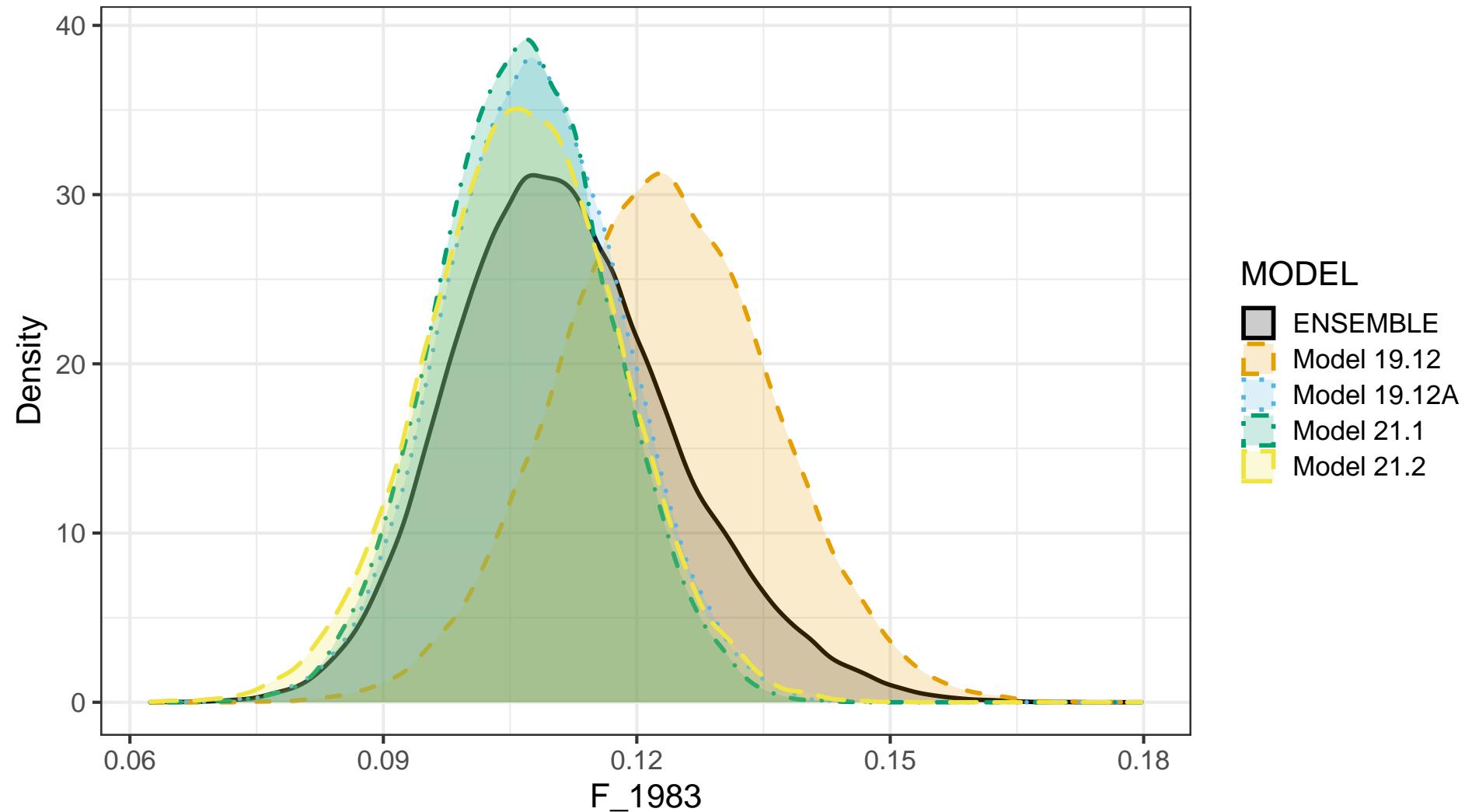
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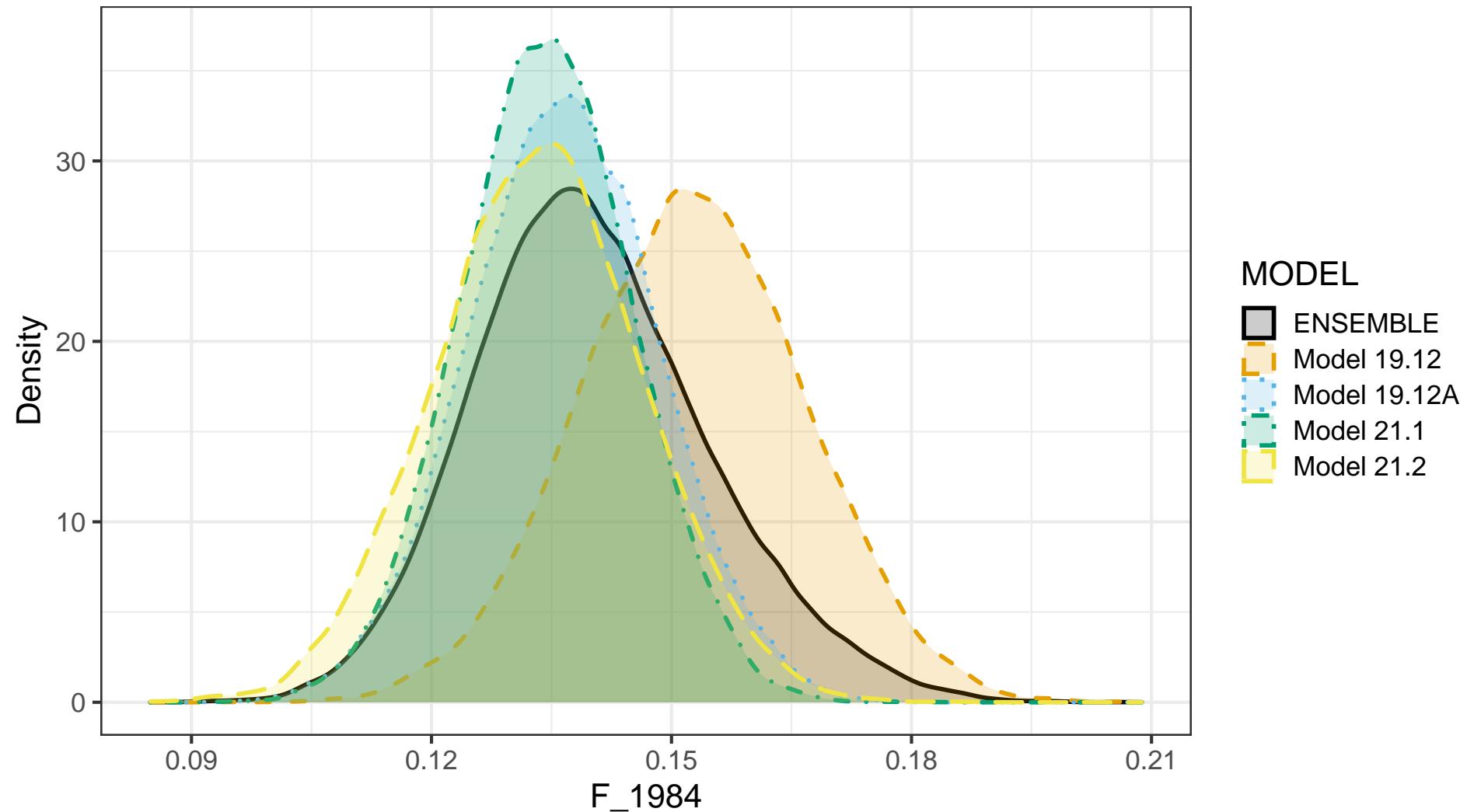
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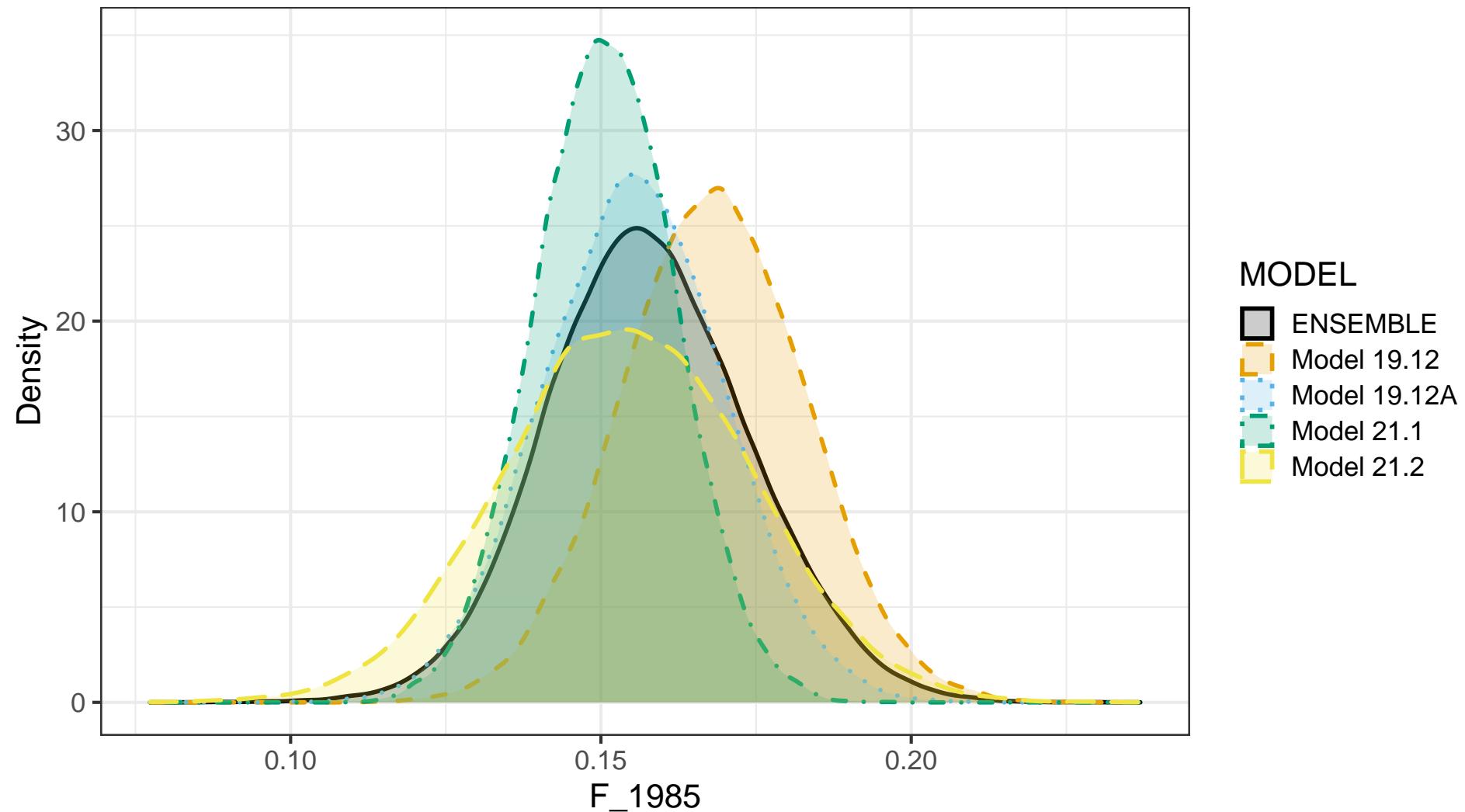
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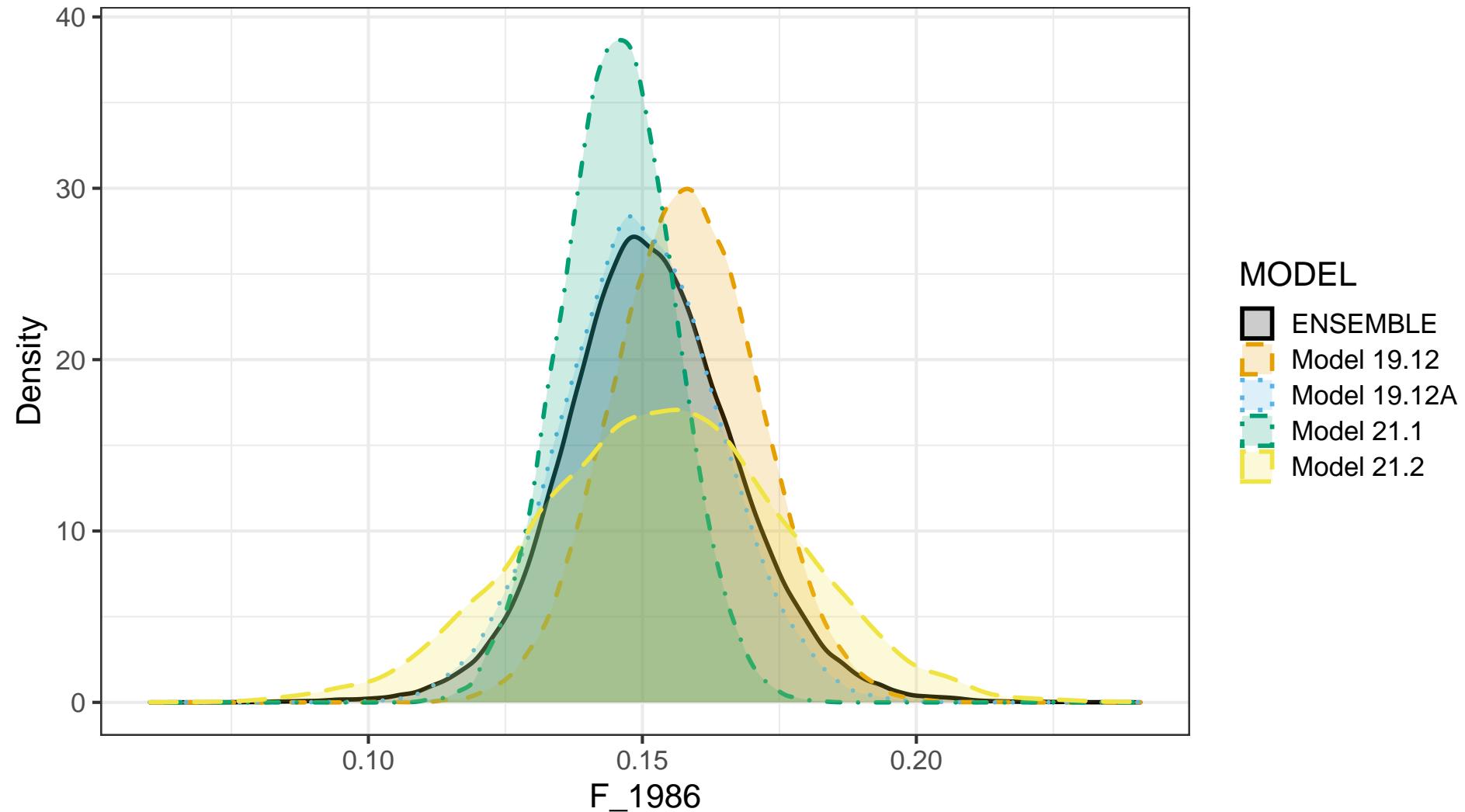
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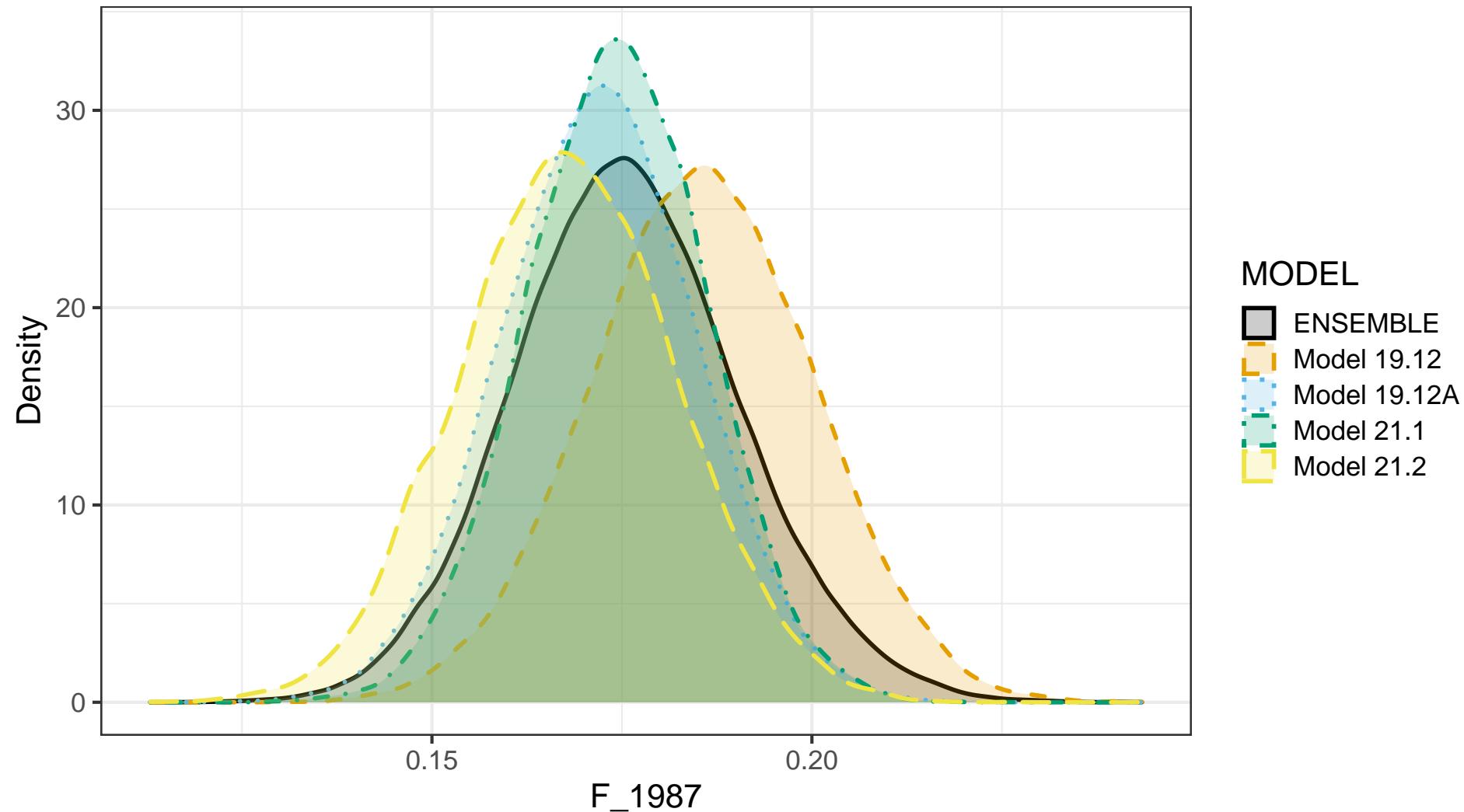
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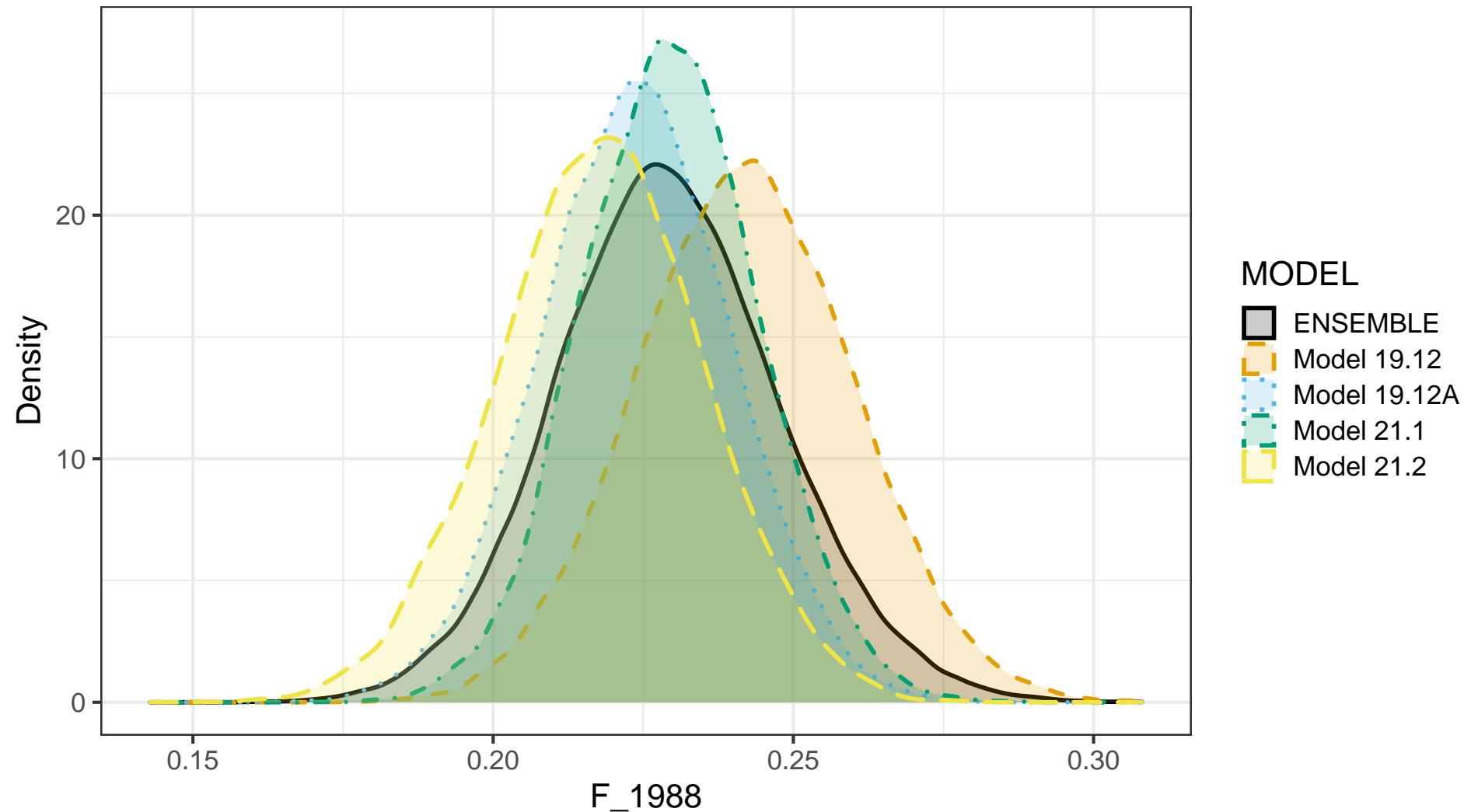
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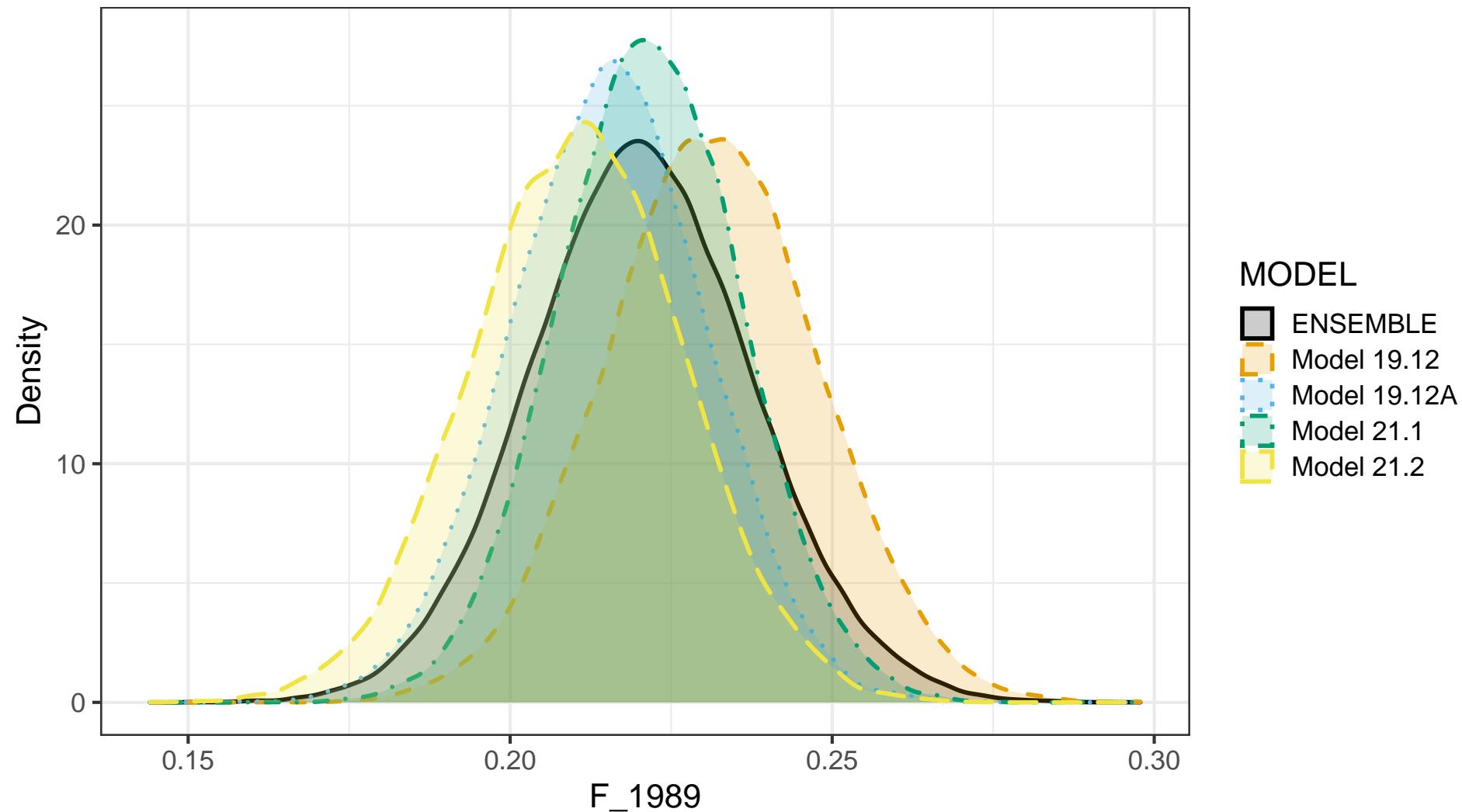
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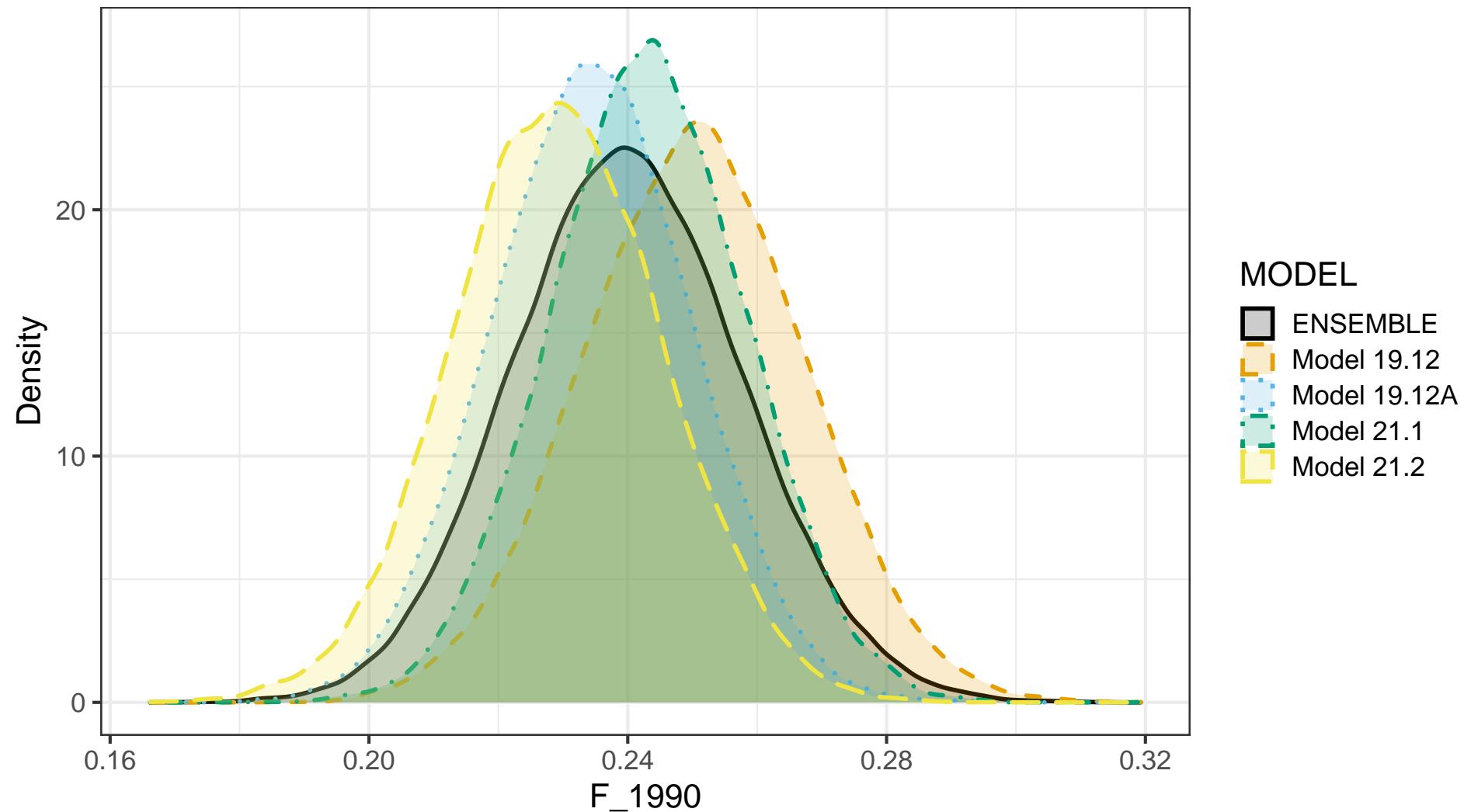
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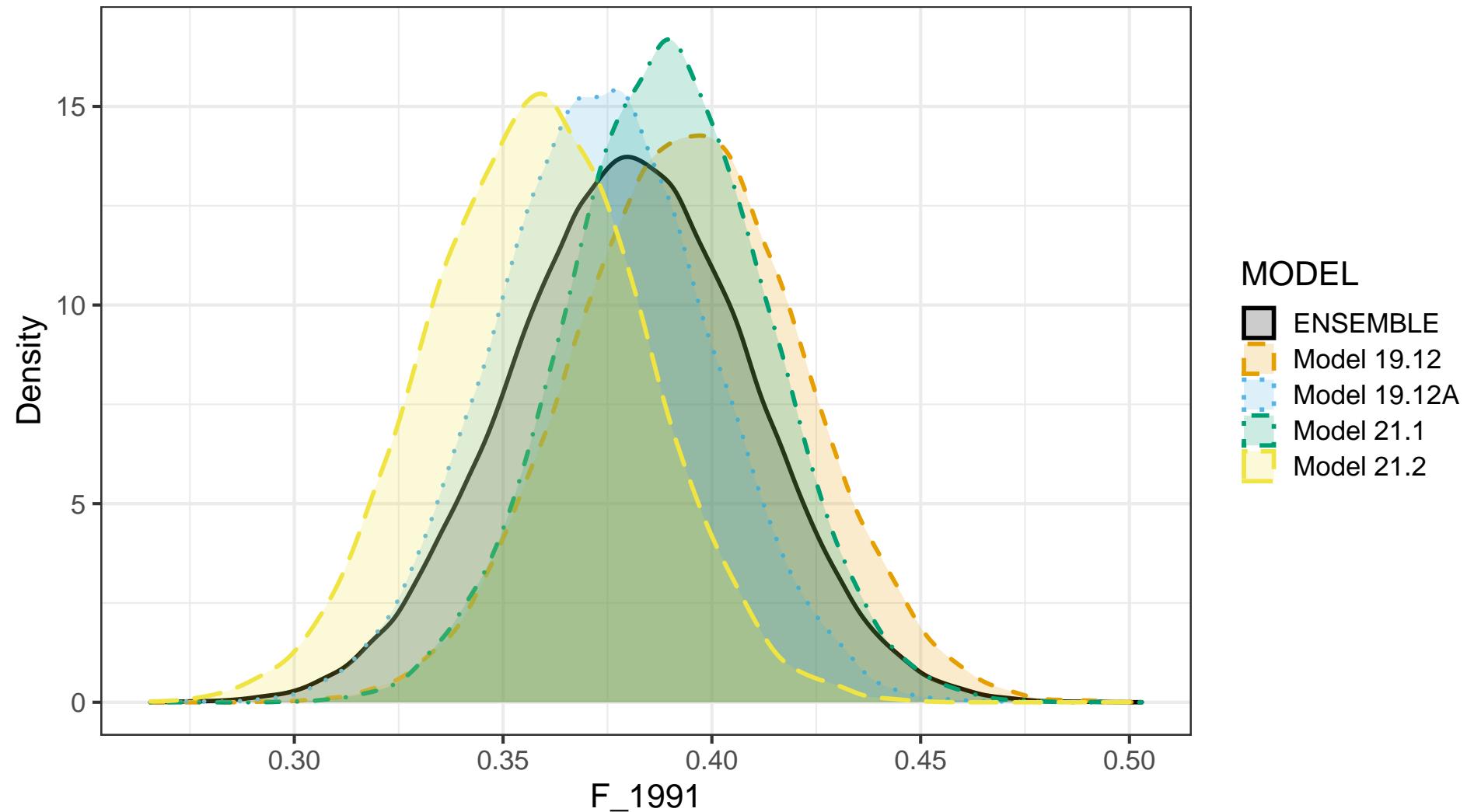
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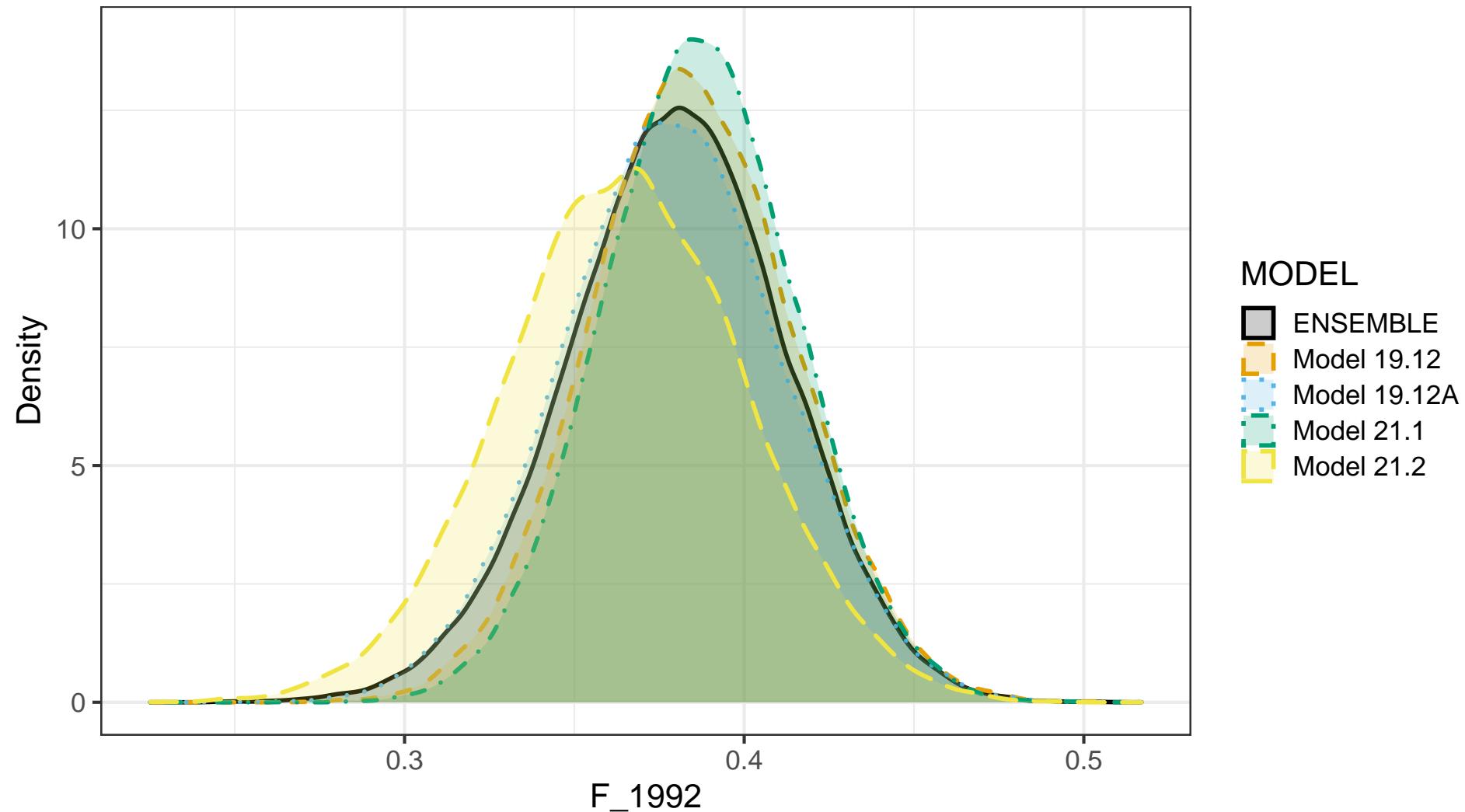
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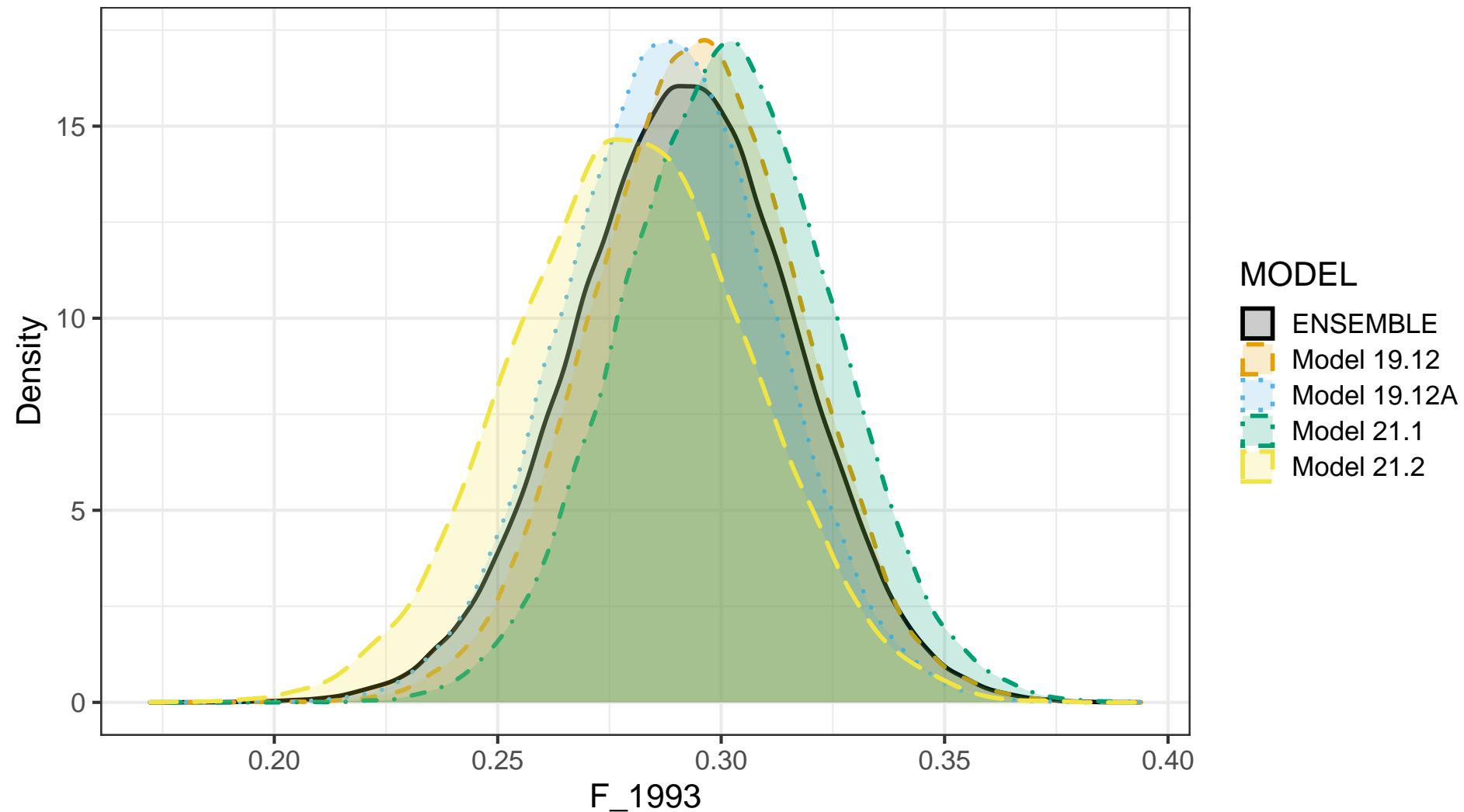
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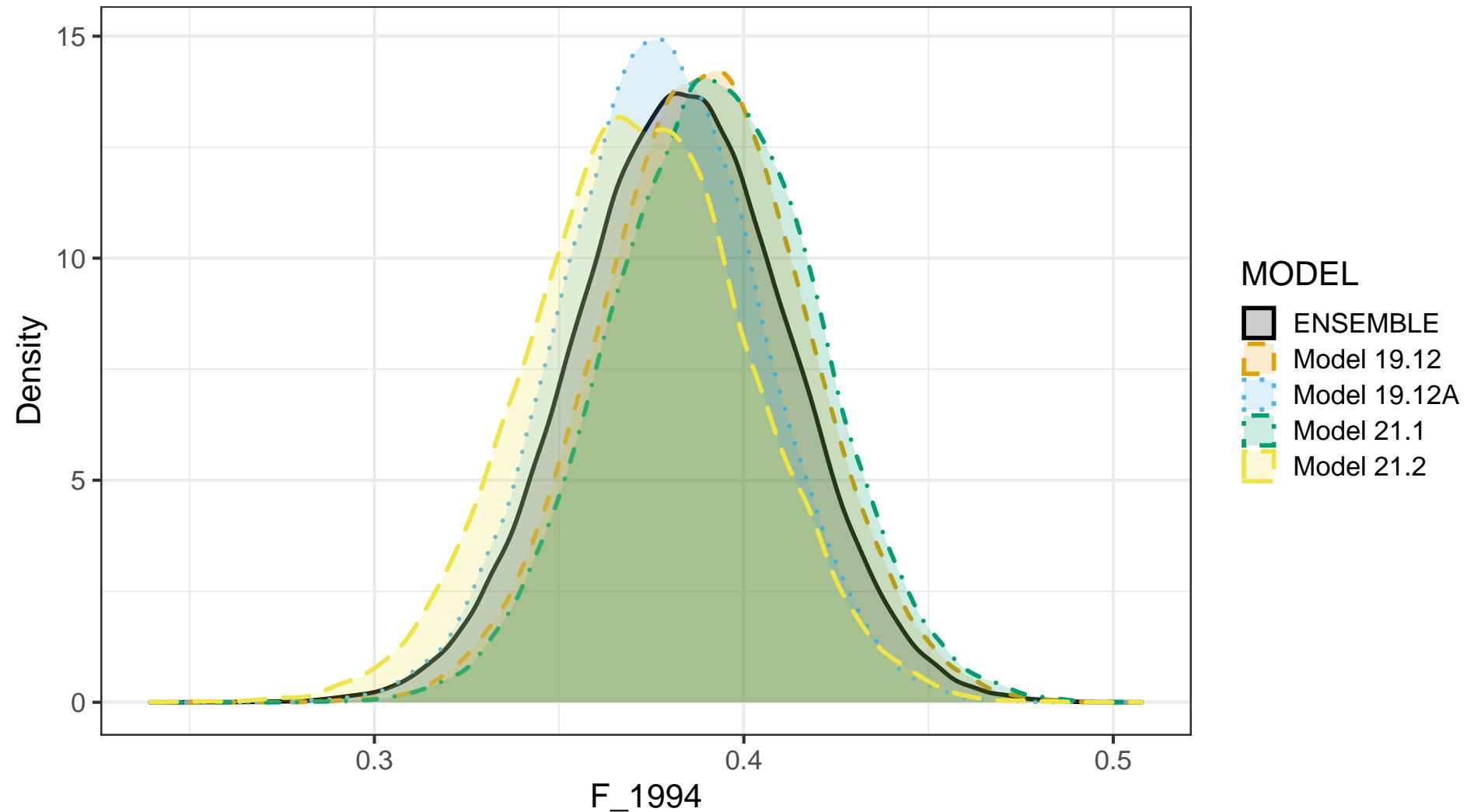
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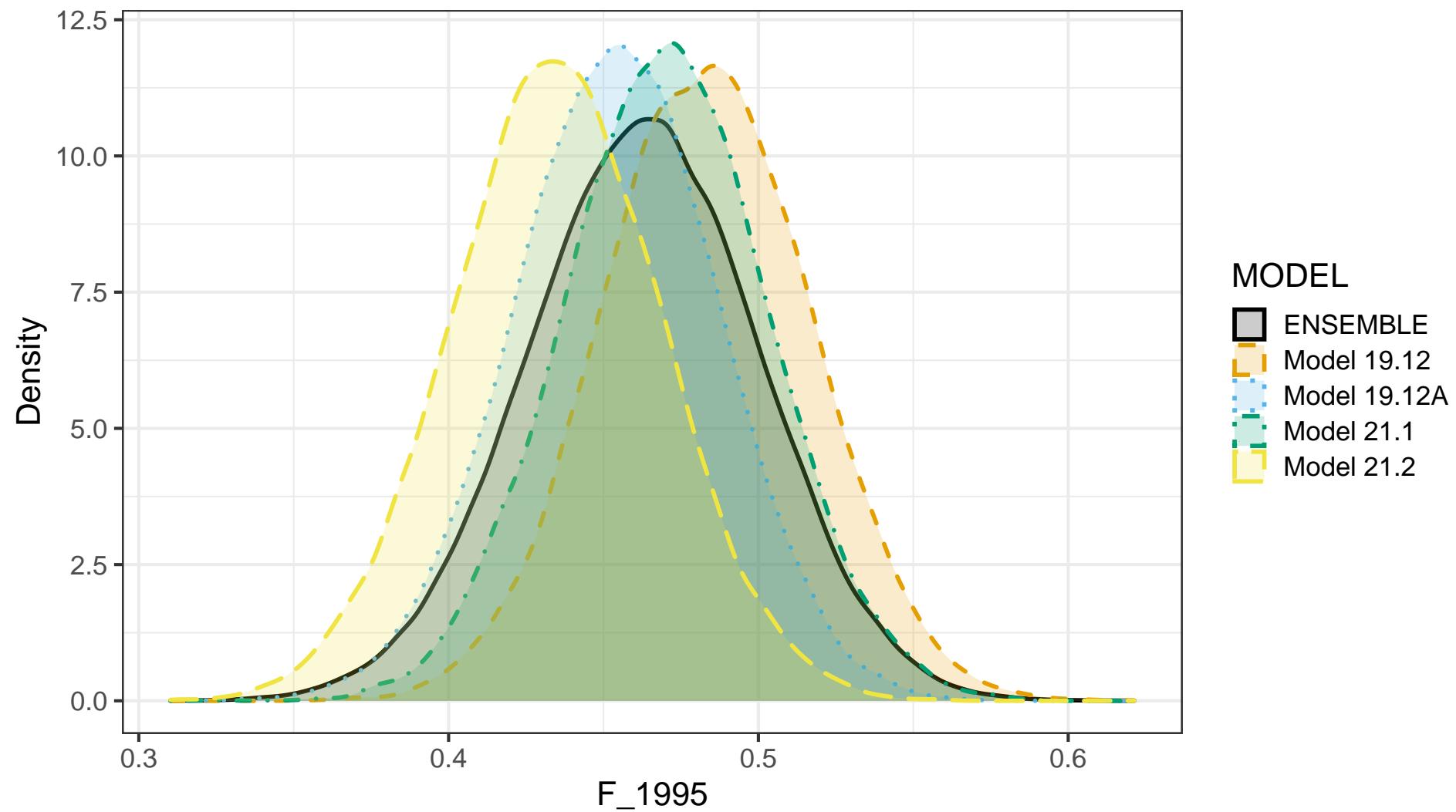
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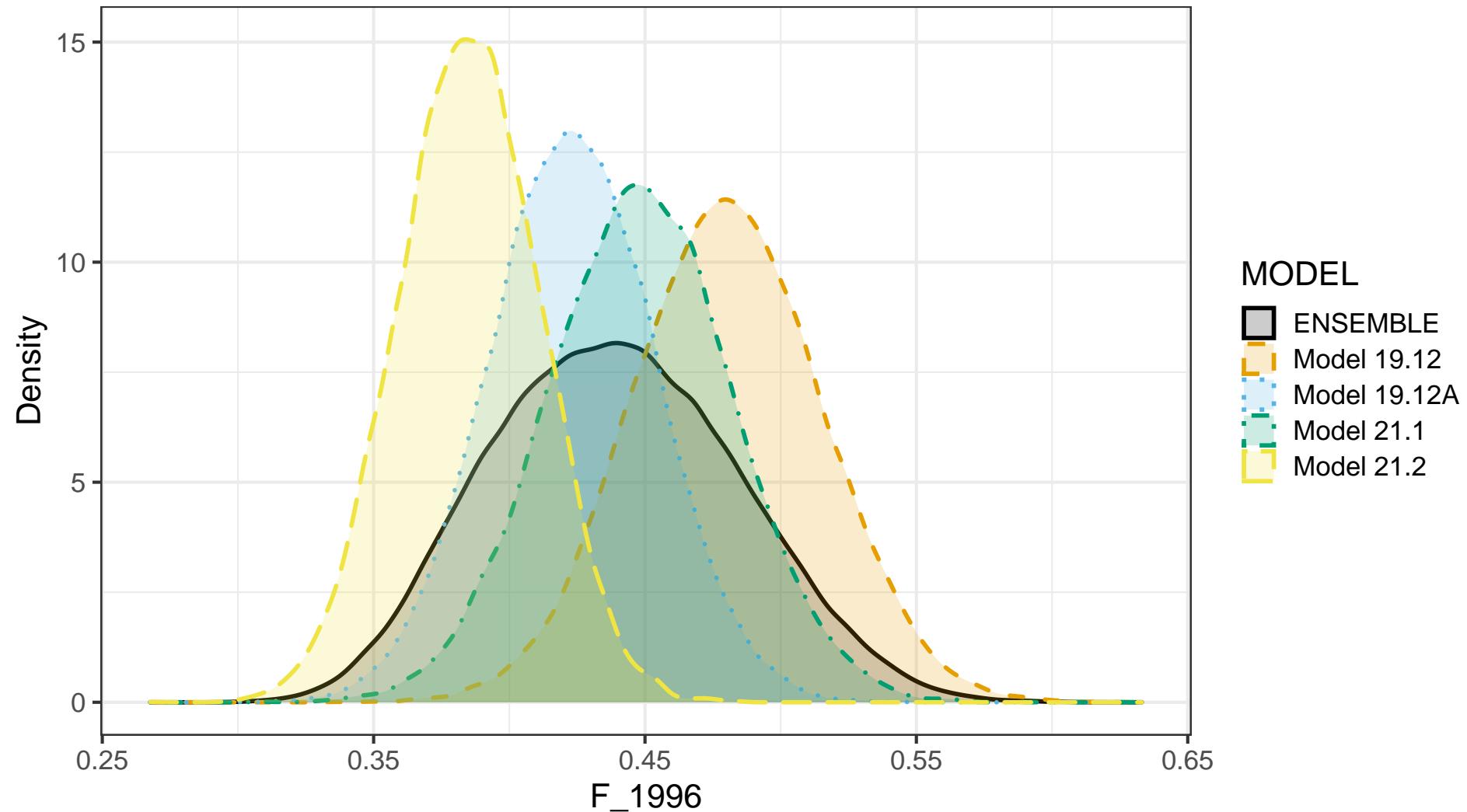
F_1994



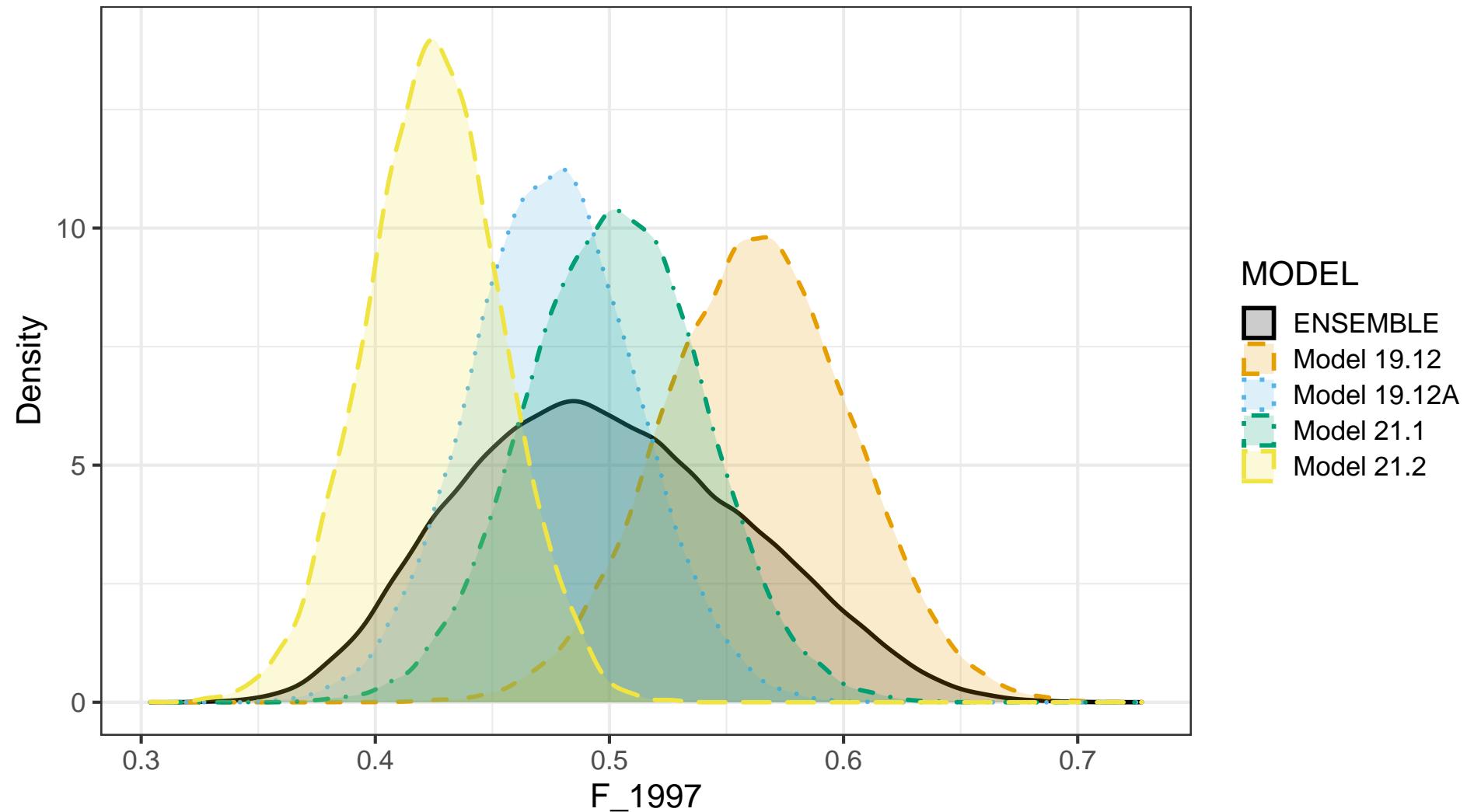
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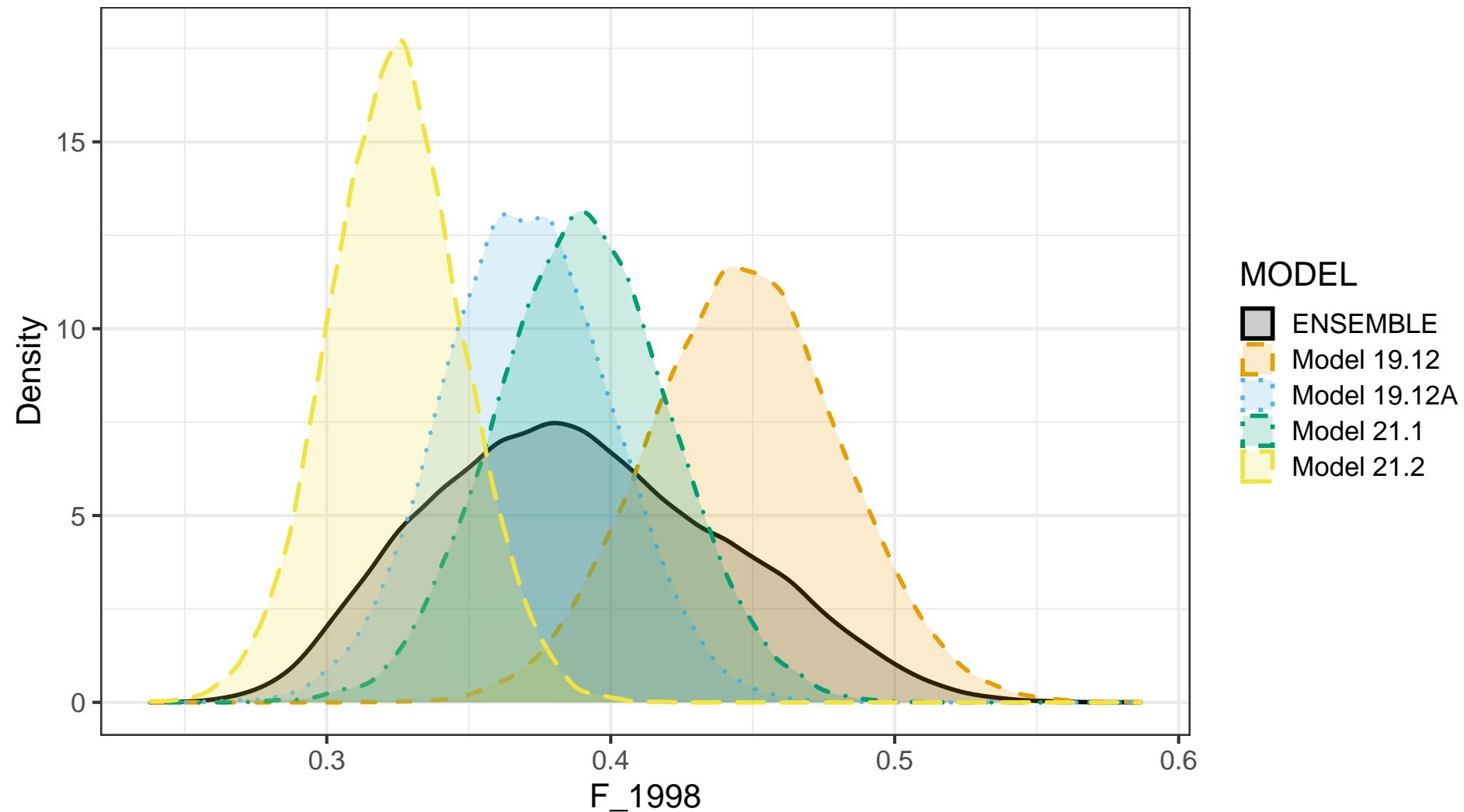
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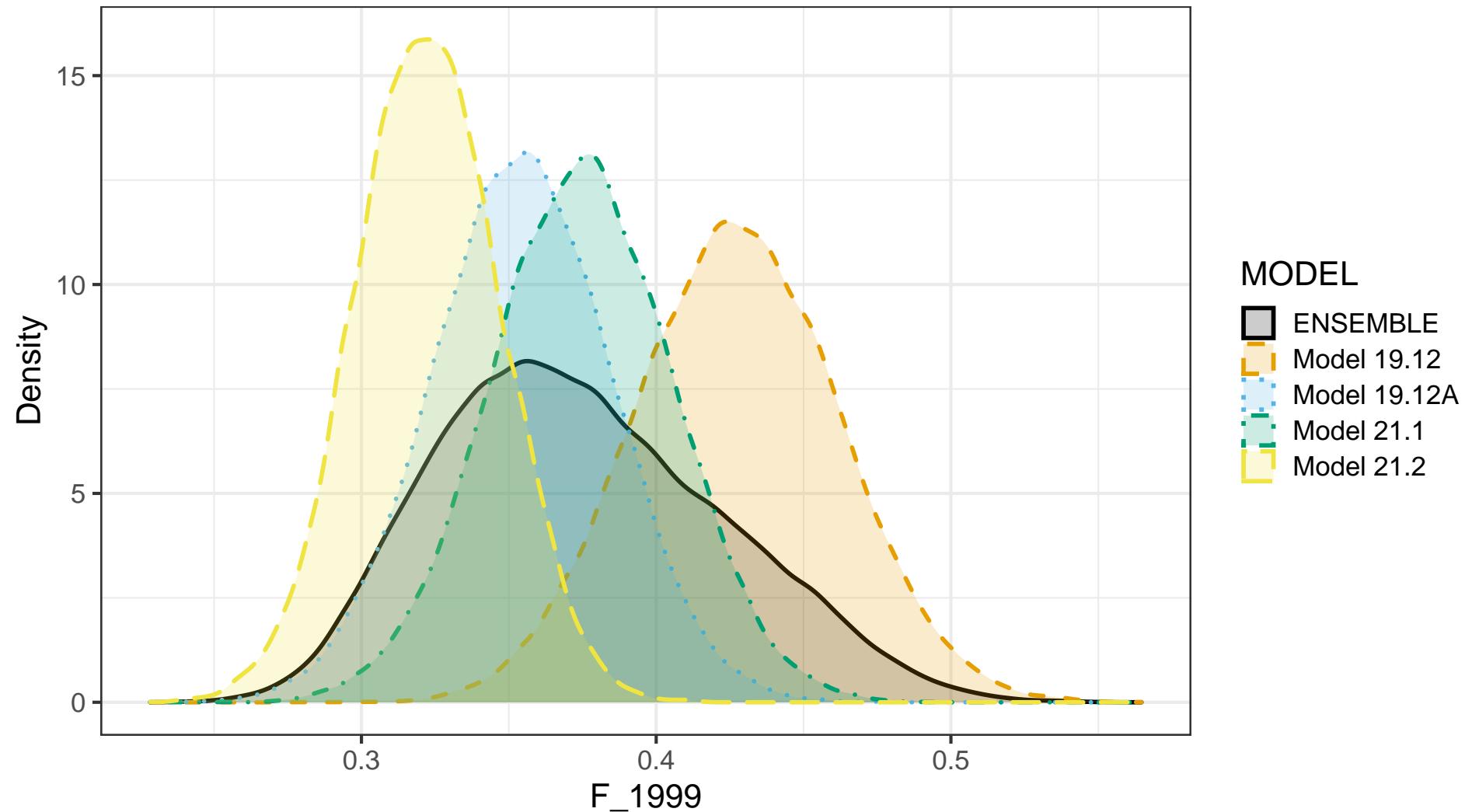
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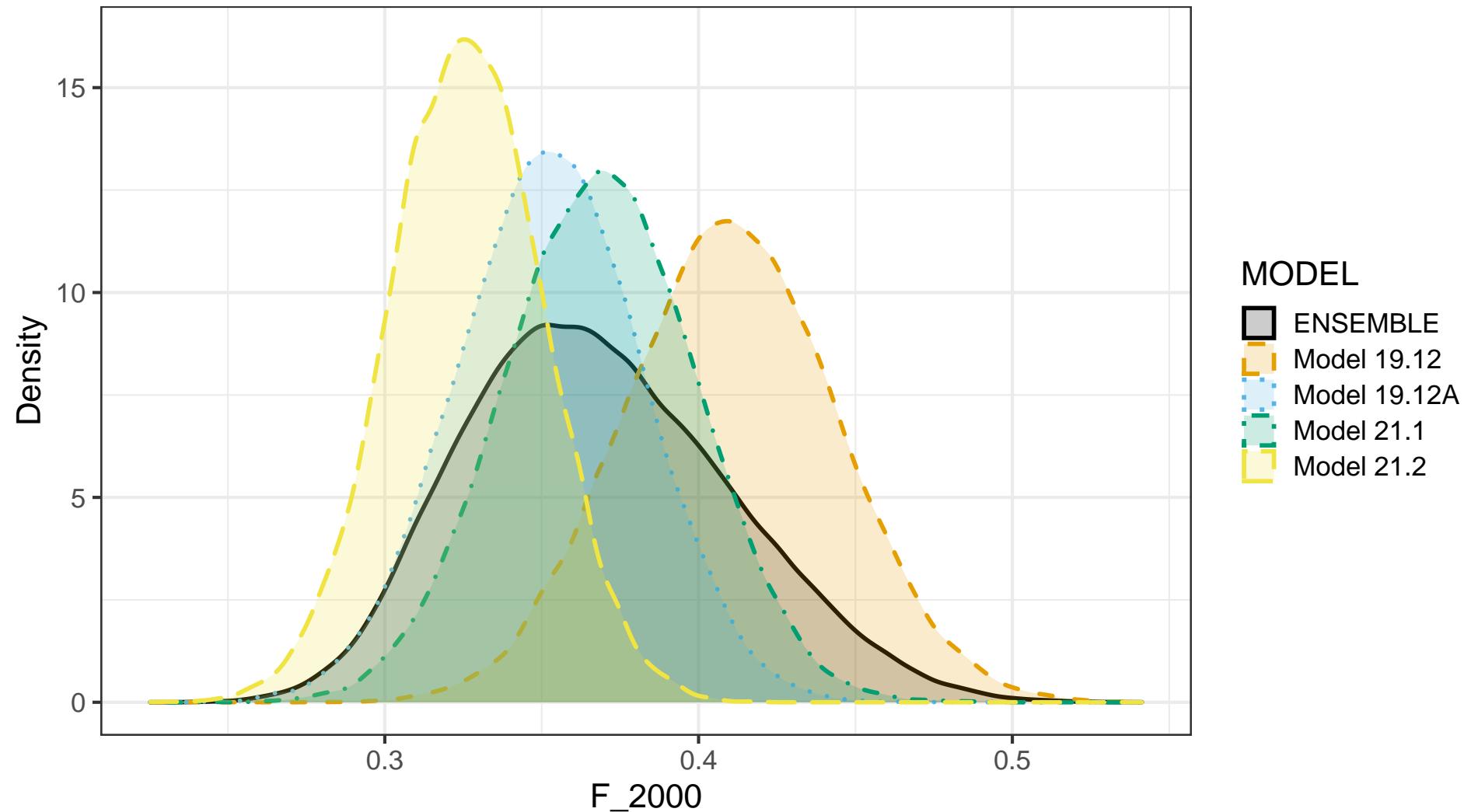
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F_1999



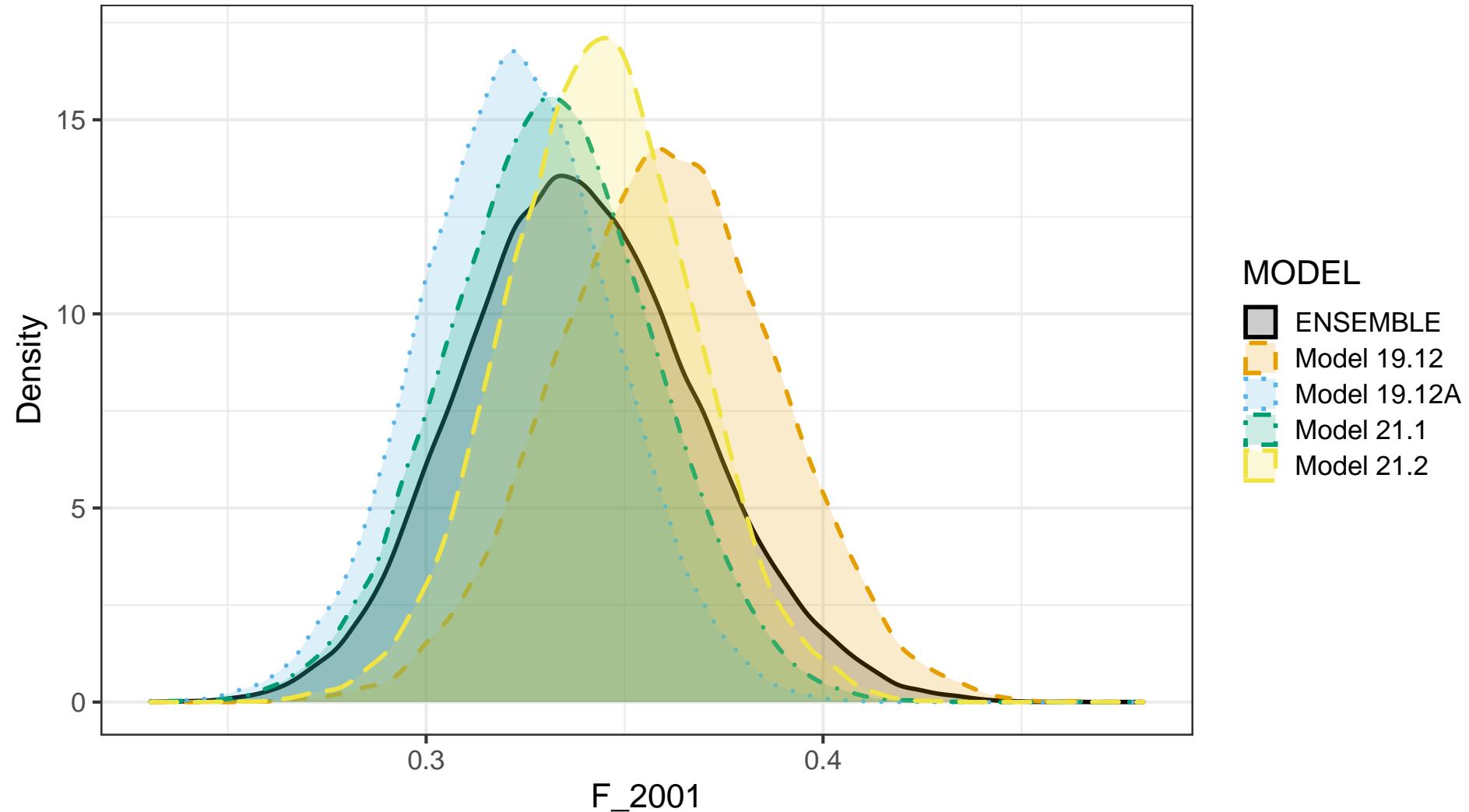
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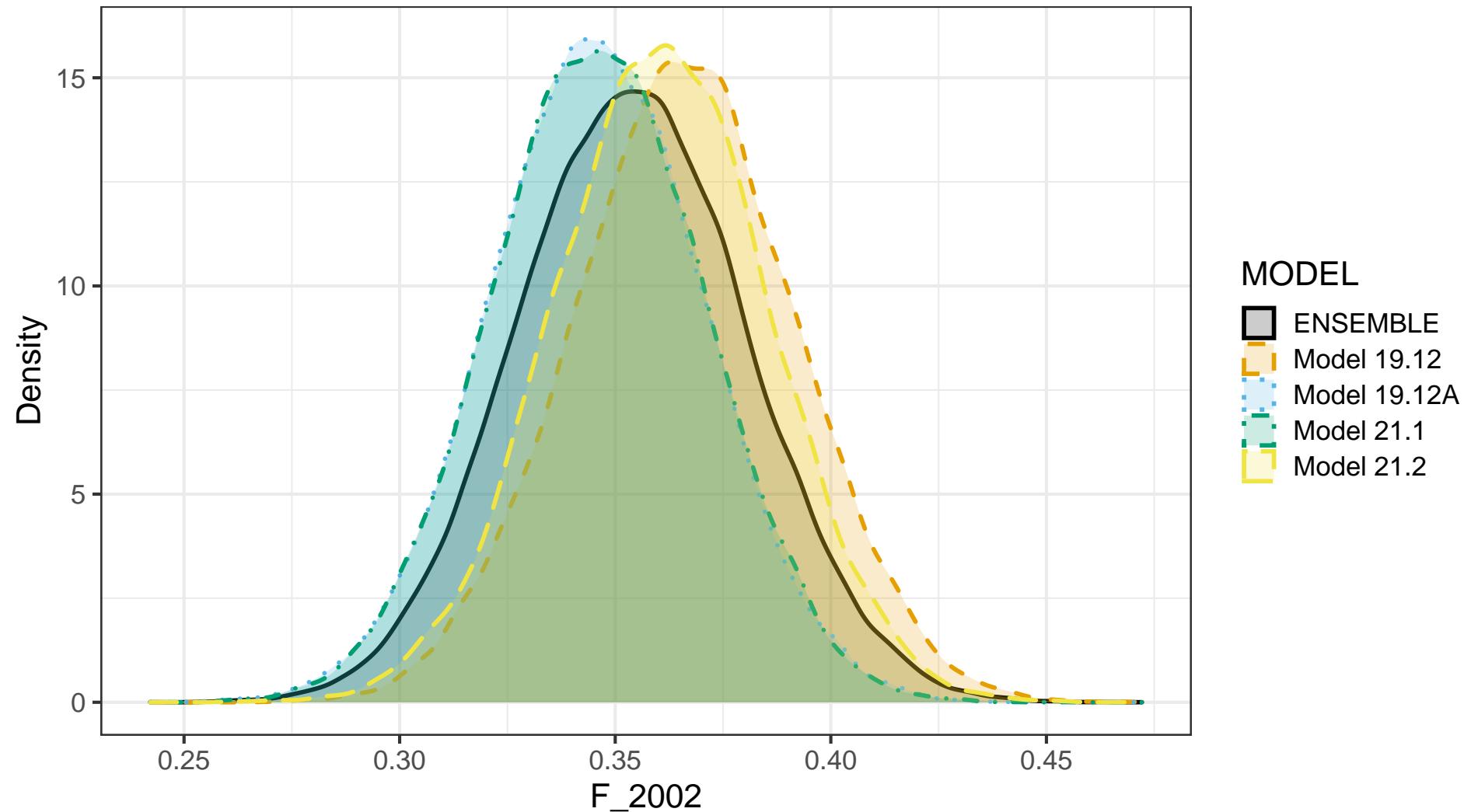
MODEL

- ENSEMBLE
- Model 19.12
- Model 19.12A
- Model 21.1
- Model 21.2

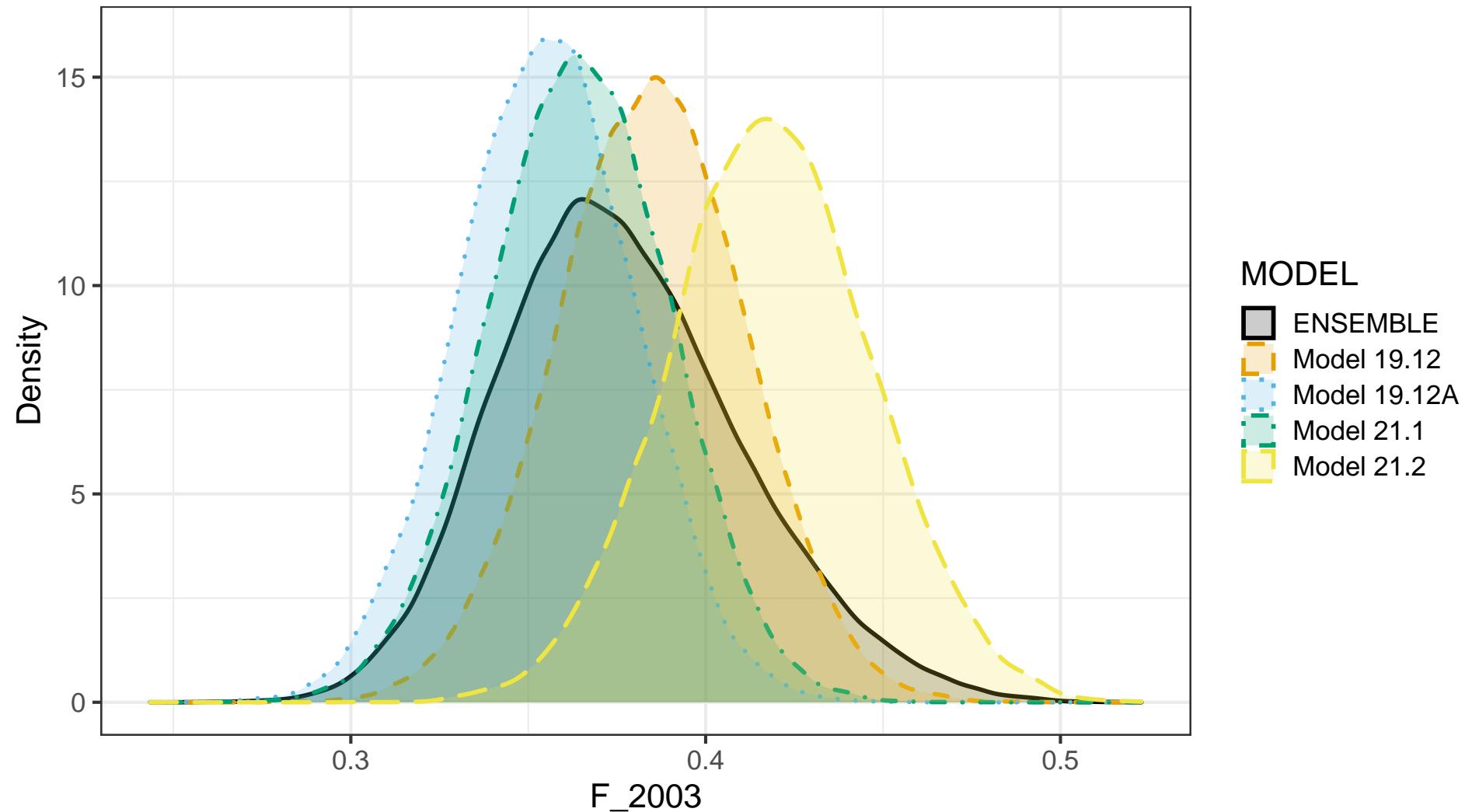
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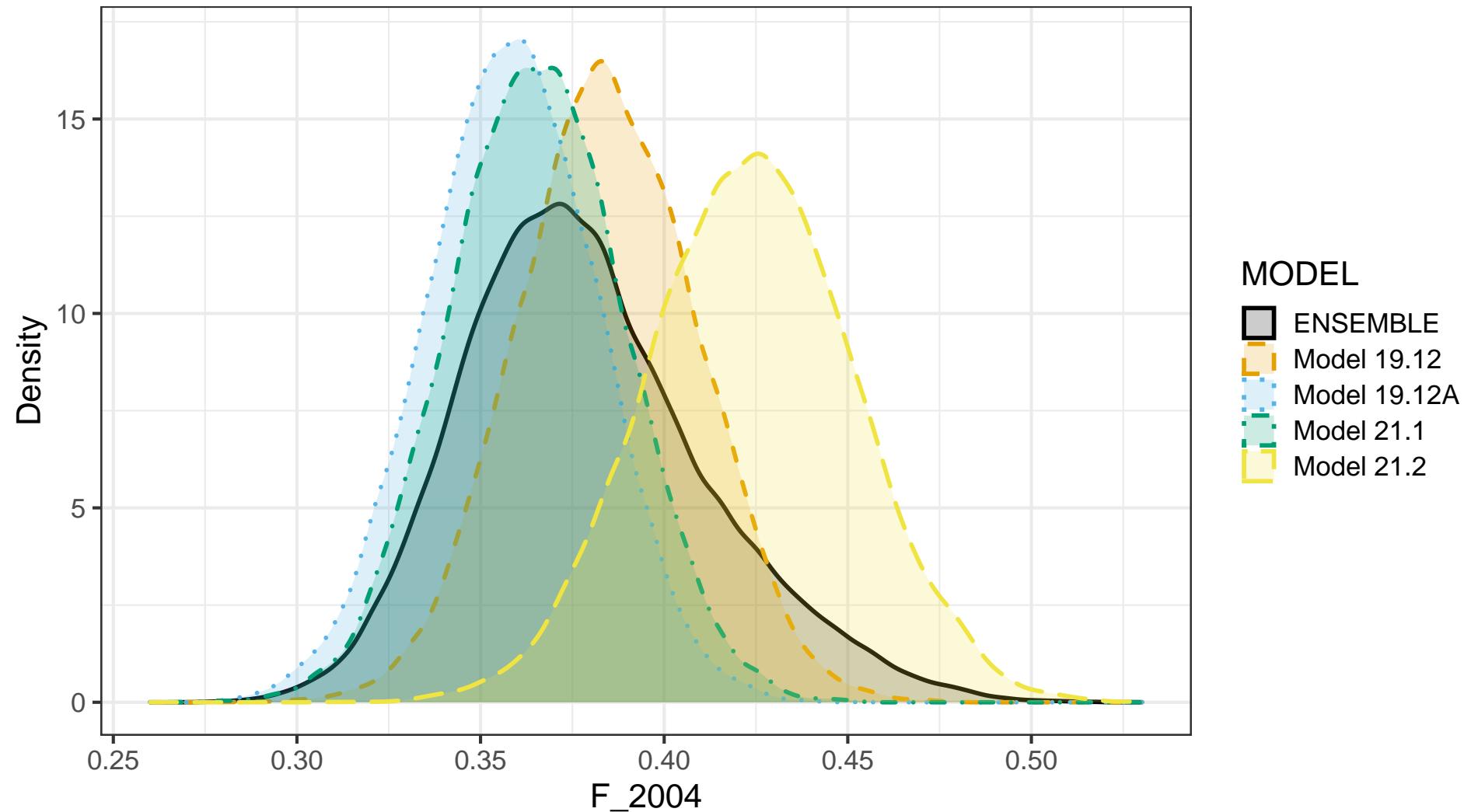
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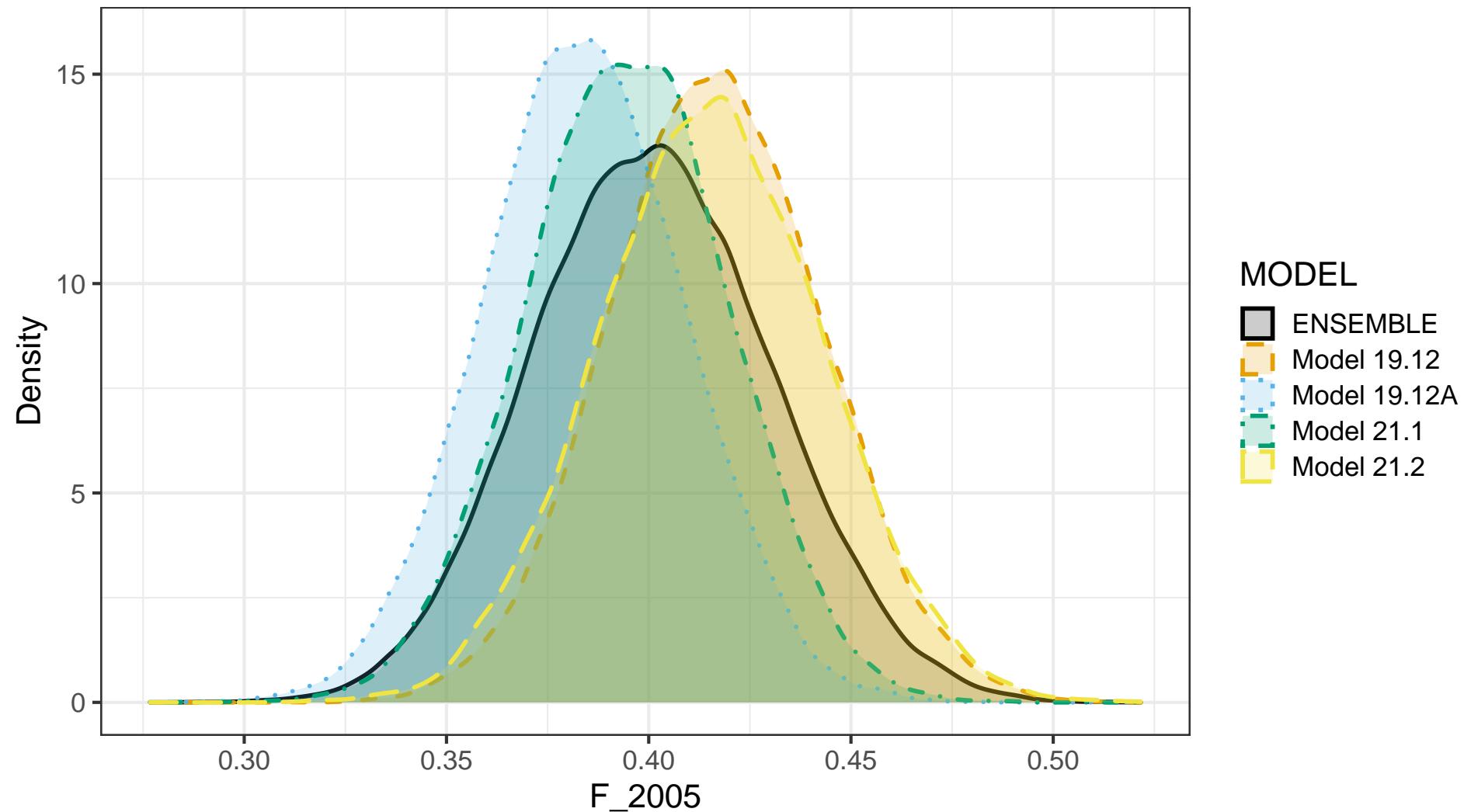
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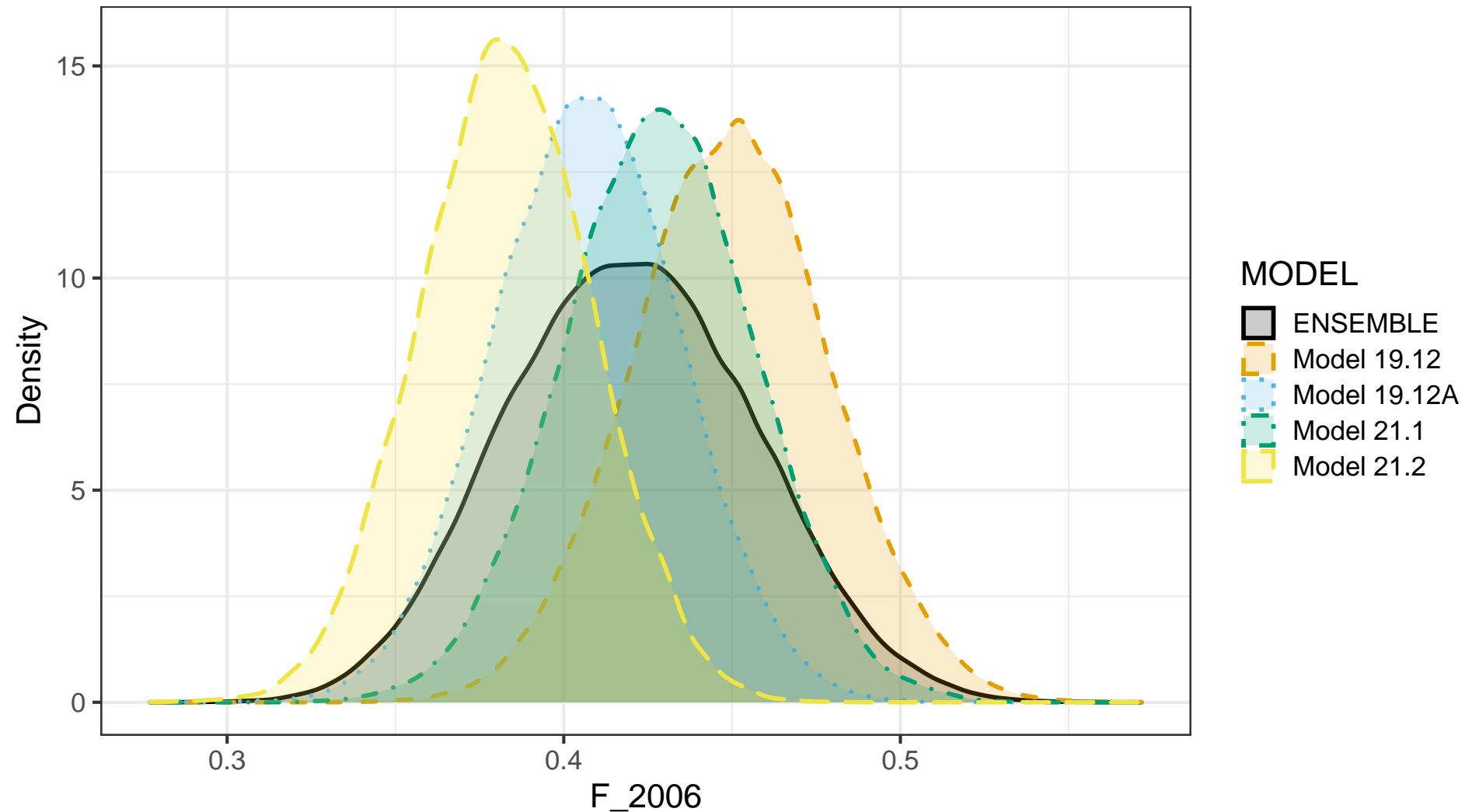
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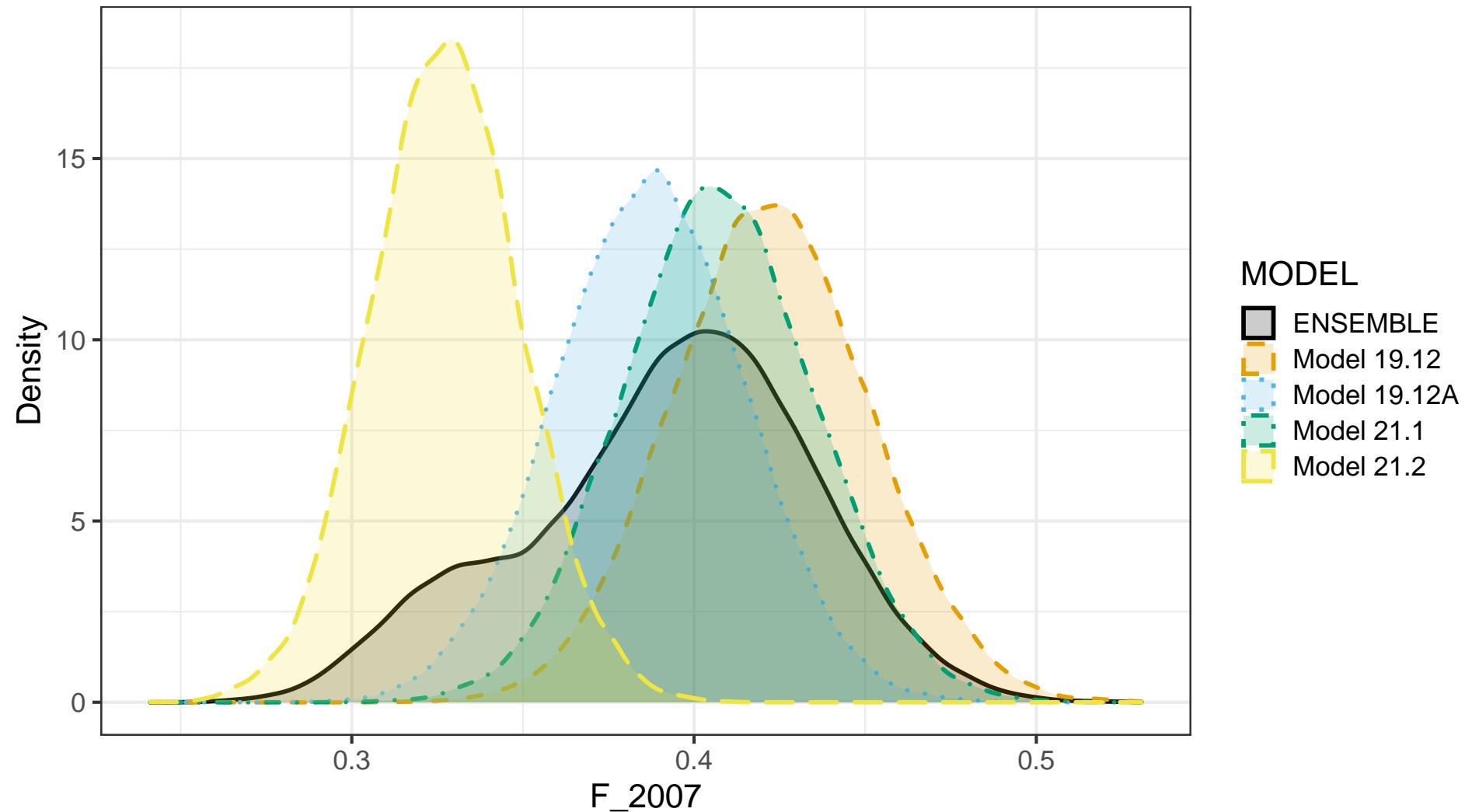
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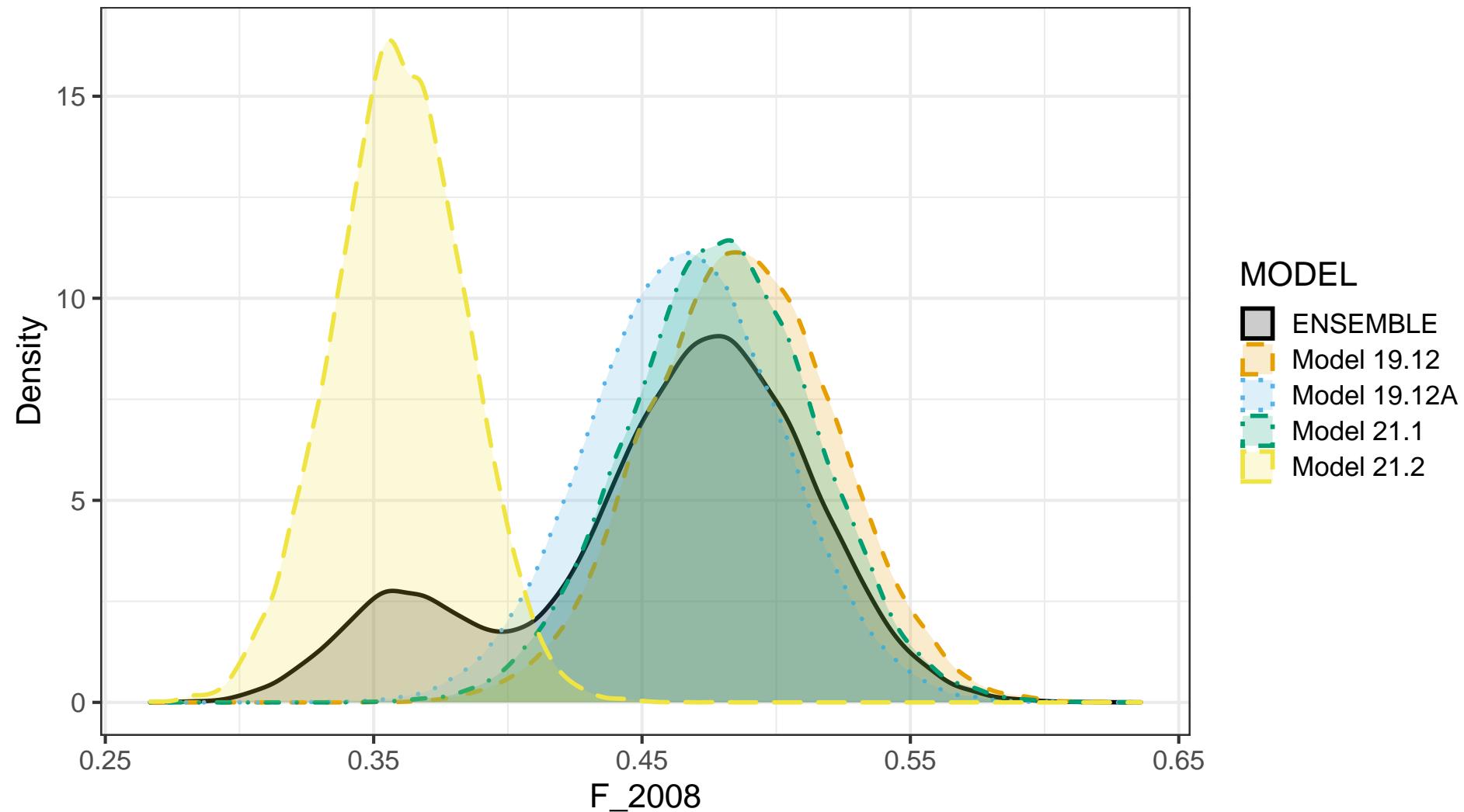
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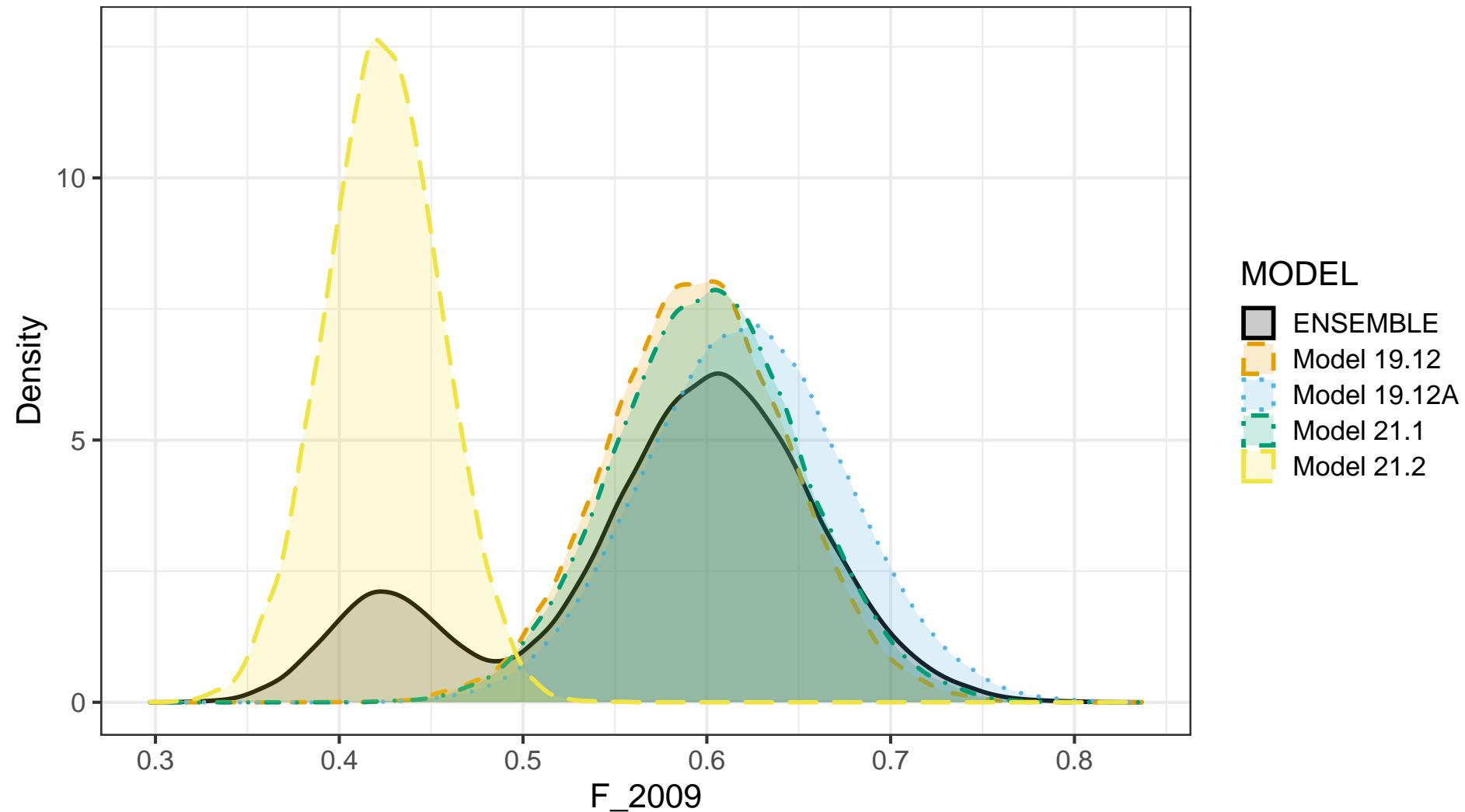
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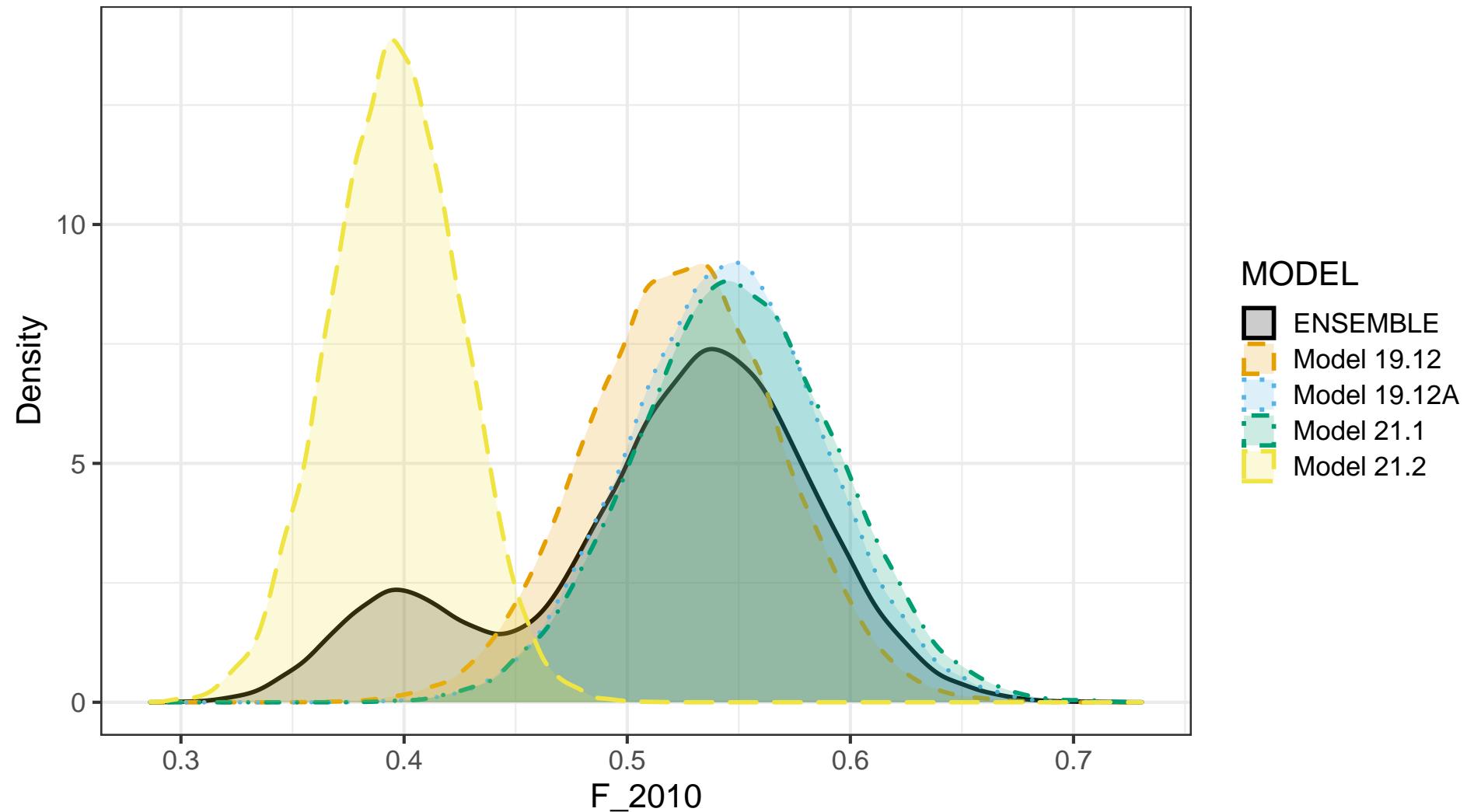
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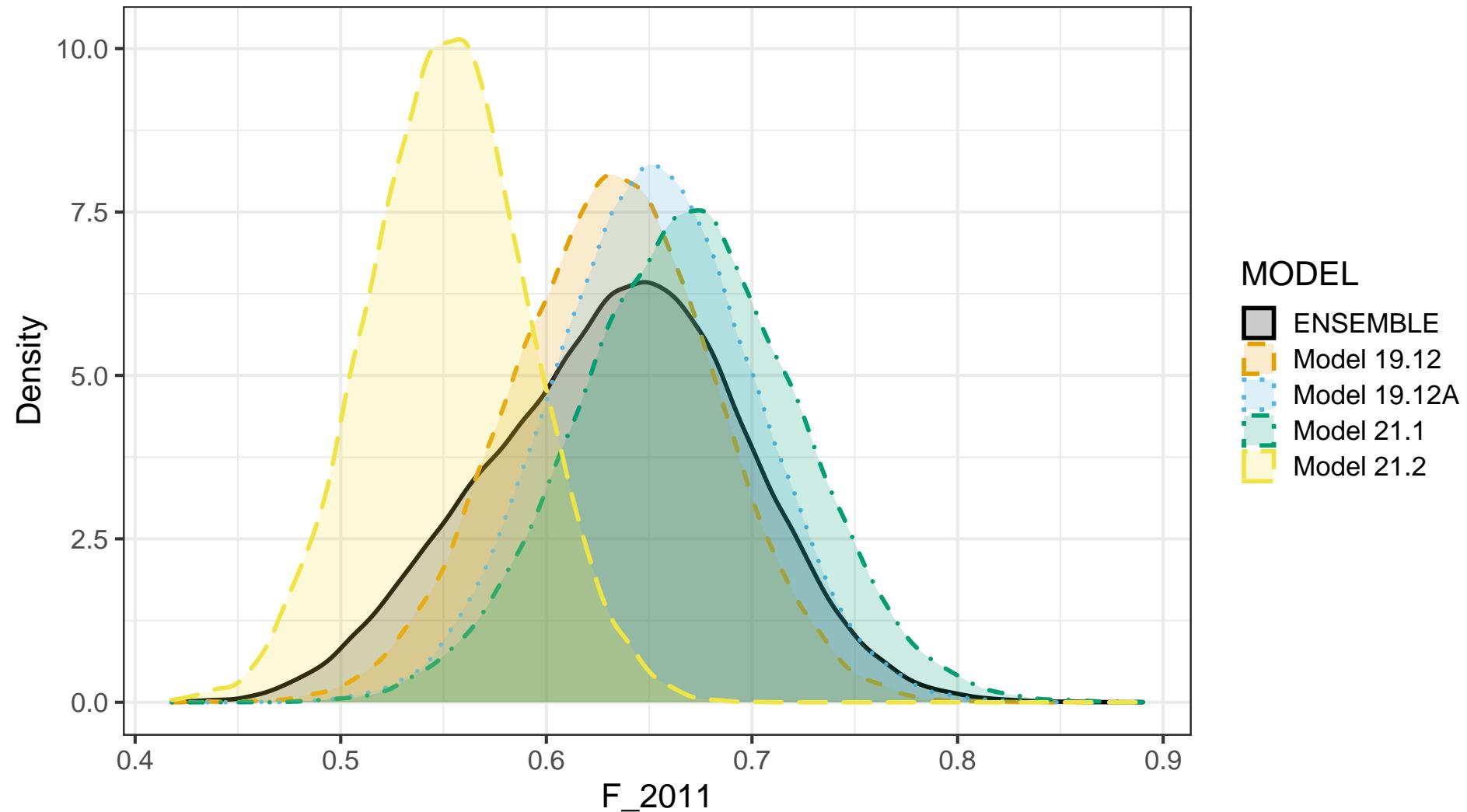
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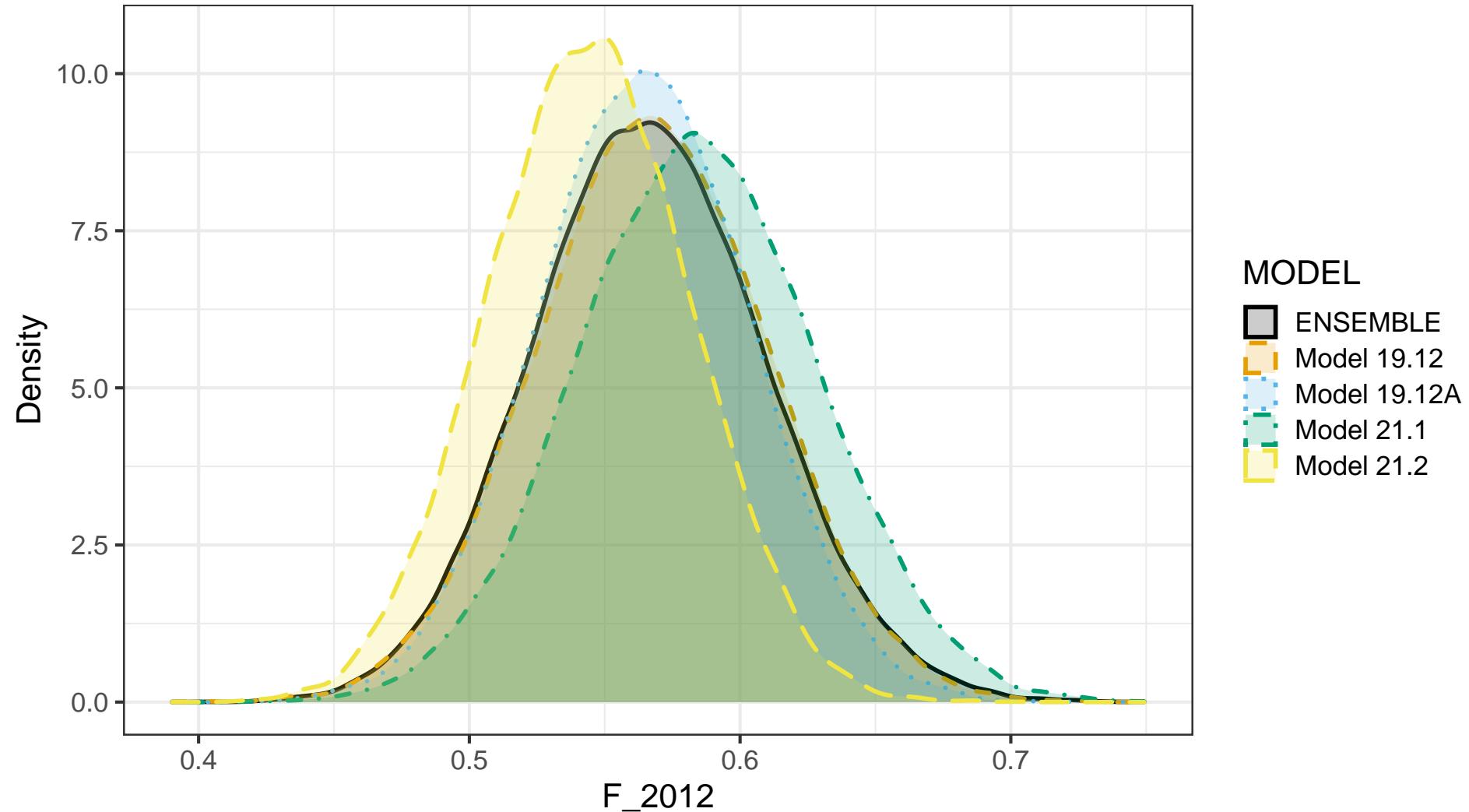
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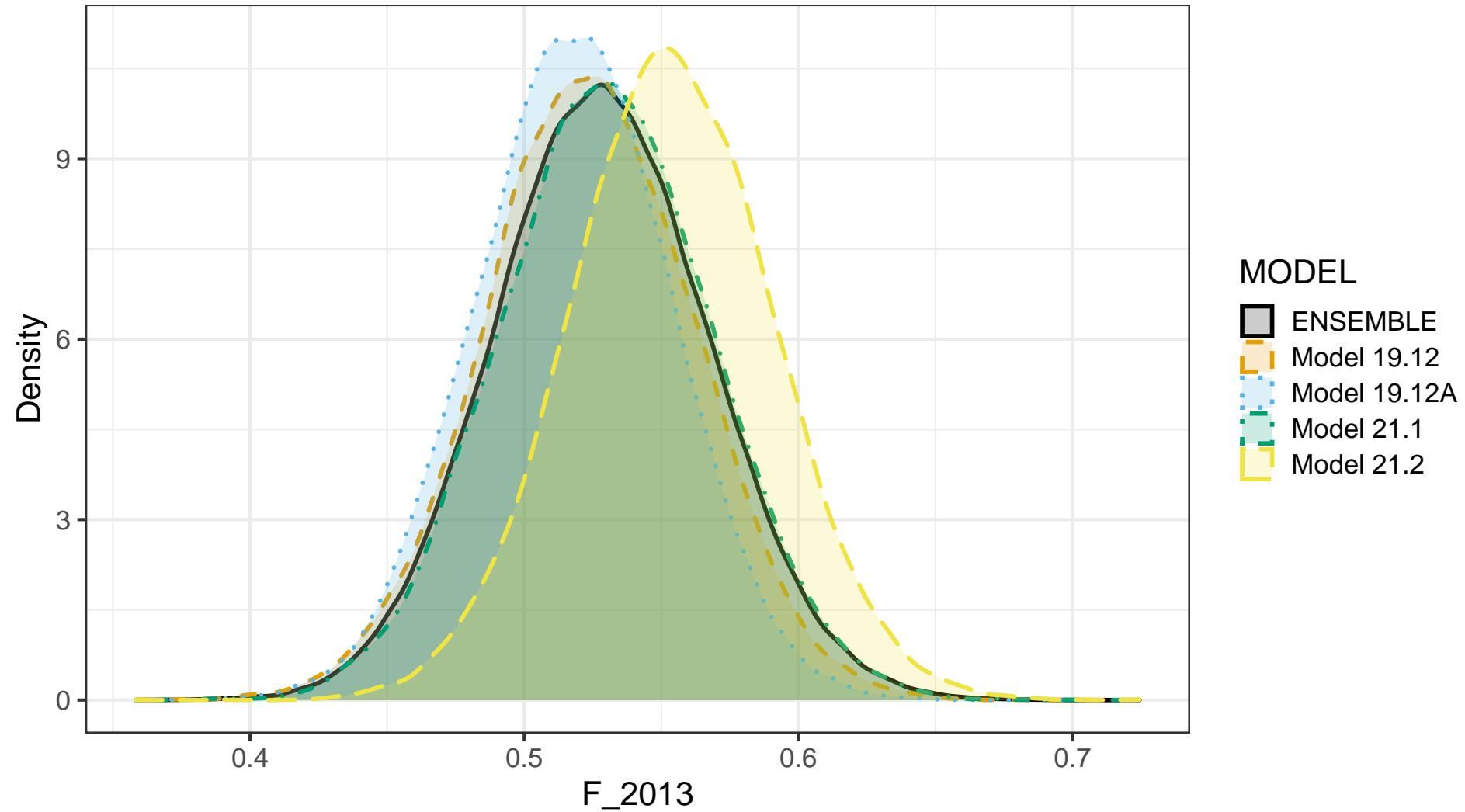
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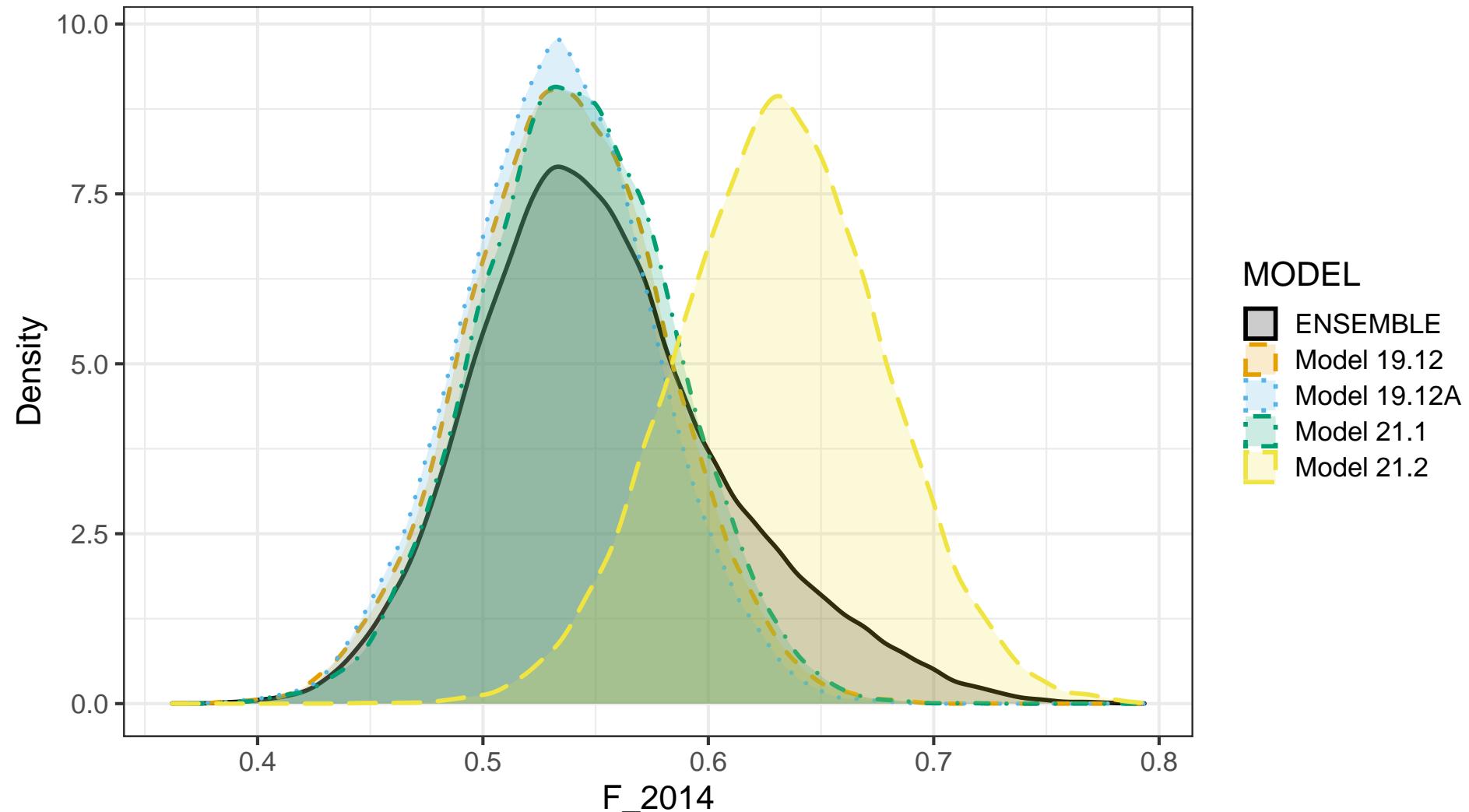
F_2012



F_2013



F_2014



F_2015

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7.5

5.0

2.5

0.0

Density

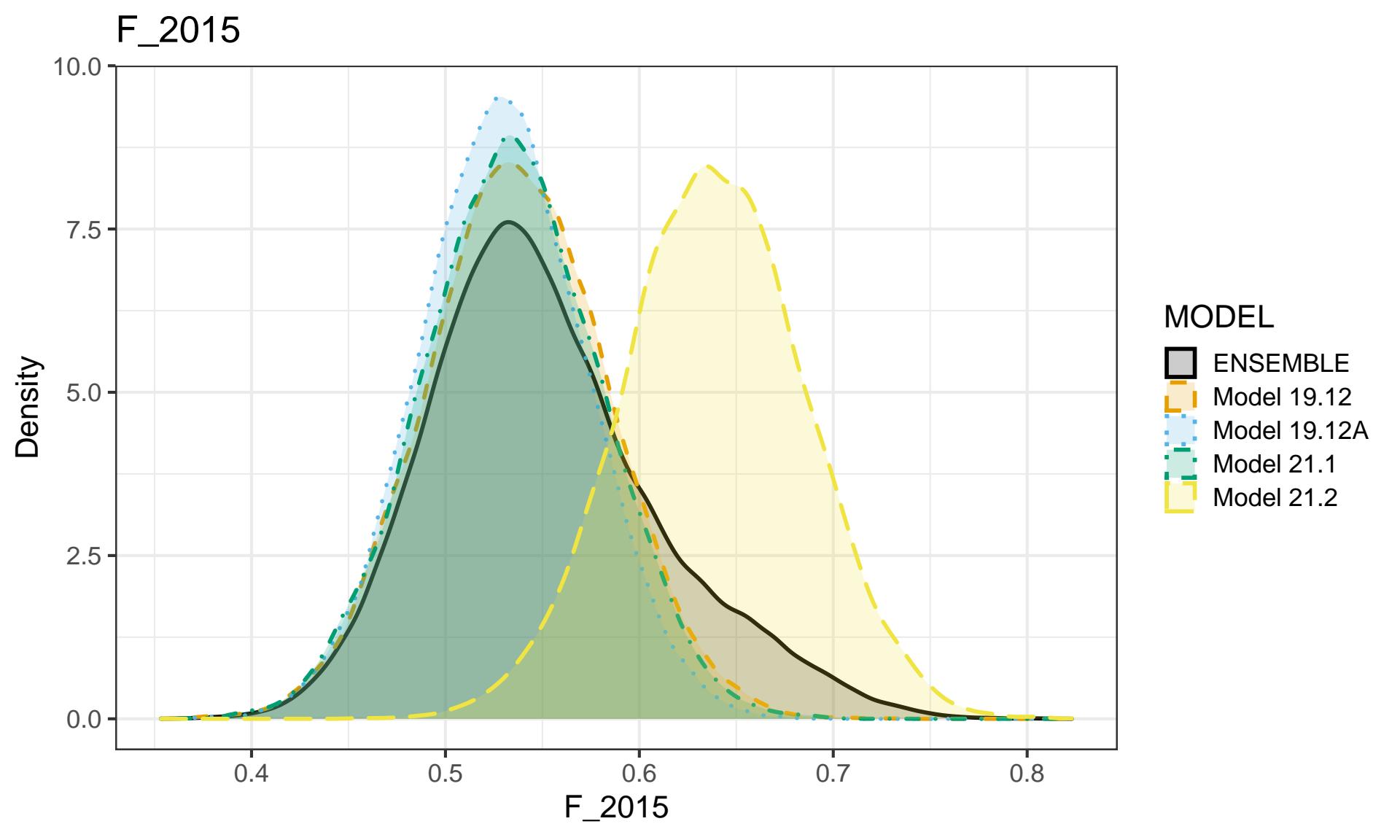
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0.5

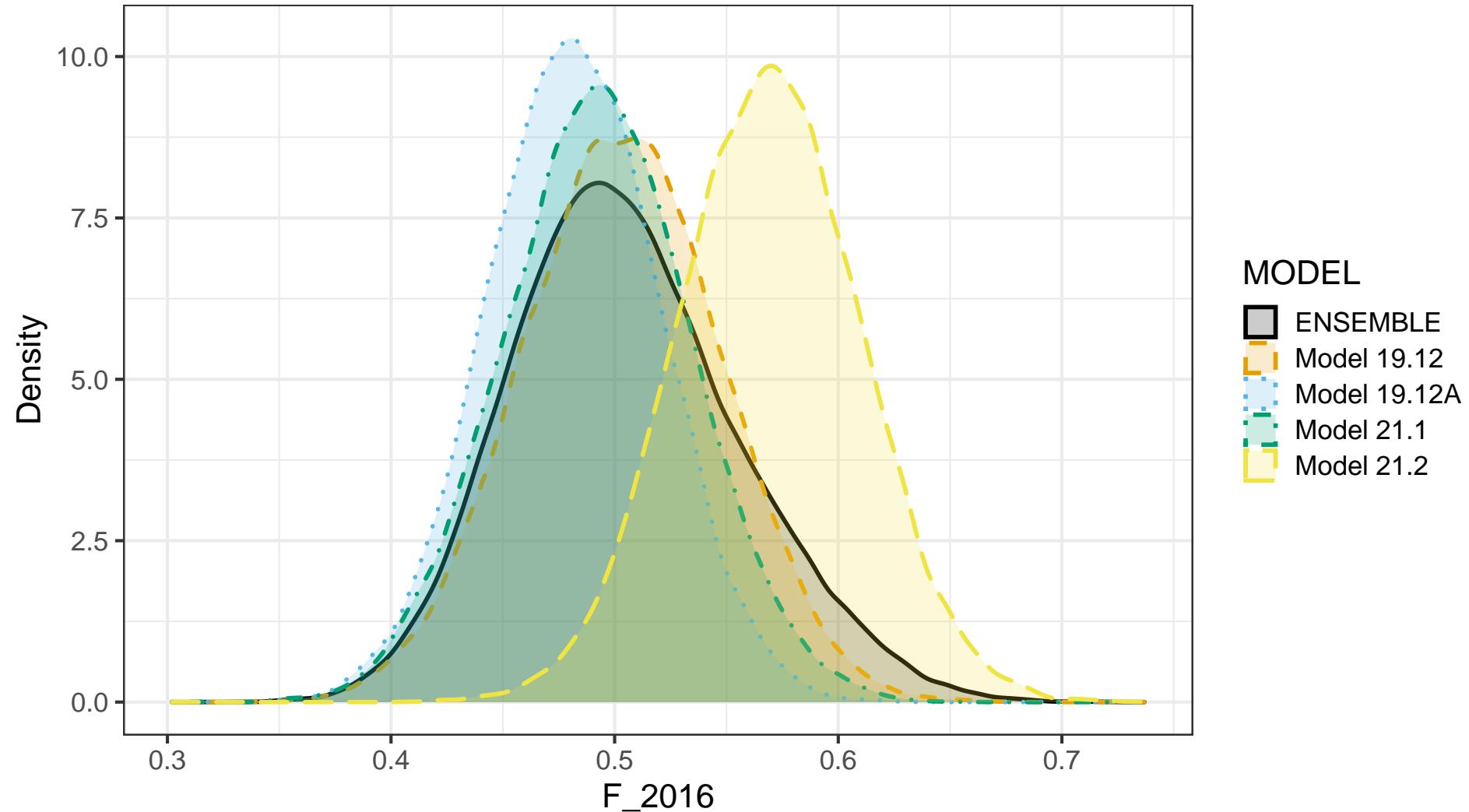
F_2015

MODEL

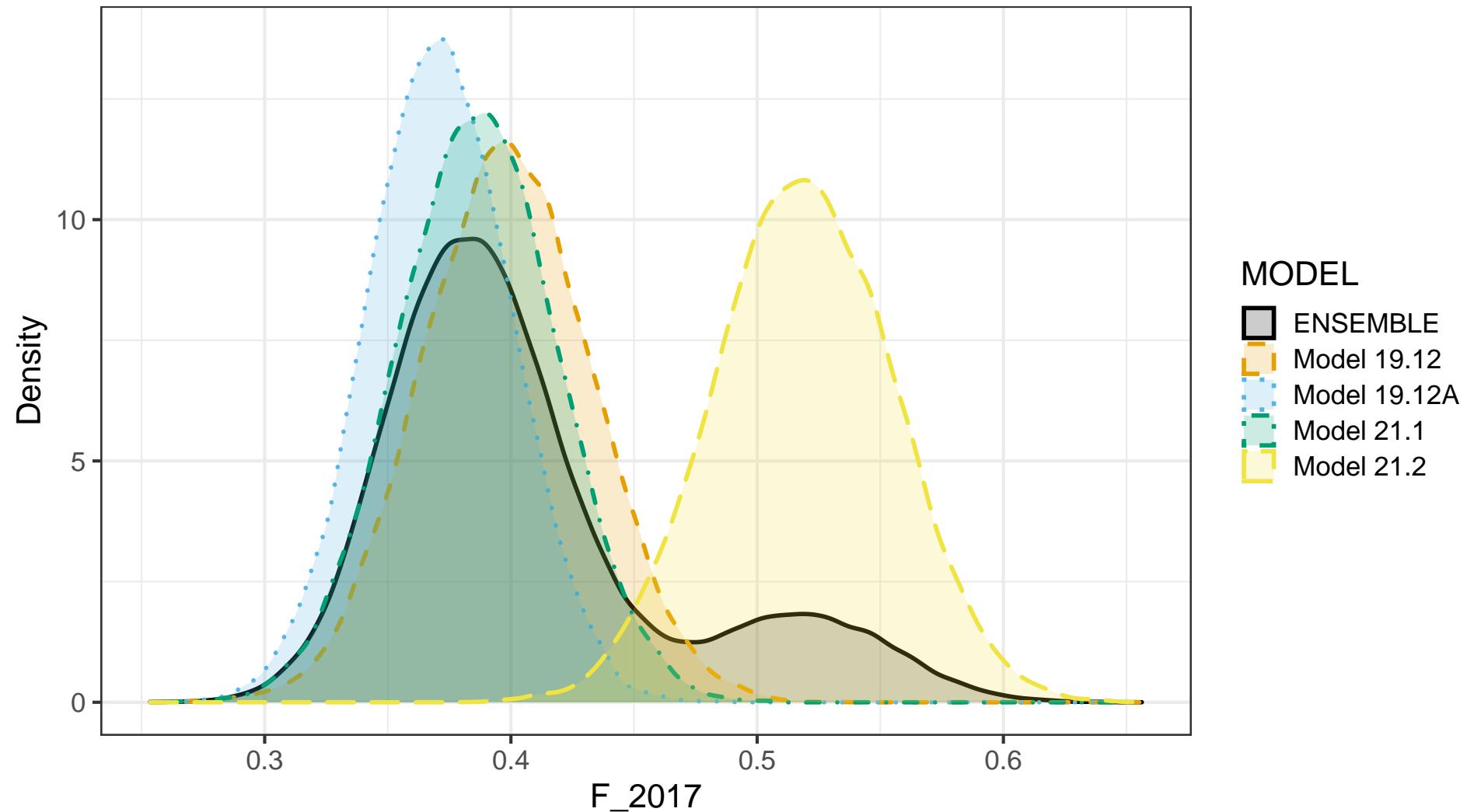
- ENSEMBLE
- Model 19.12
- Model 19.12A
- Model 21.1
- Model 21.2



F_2016

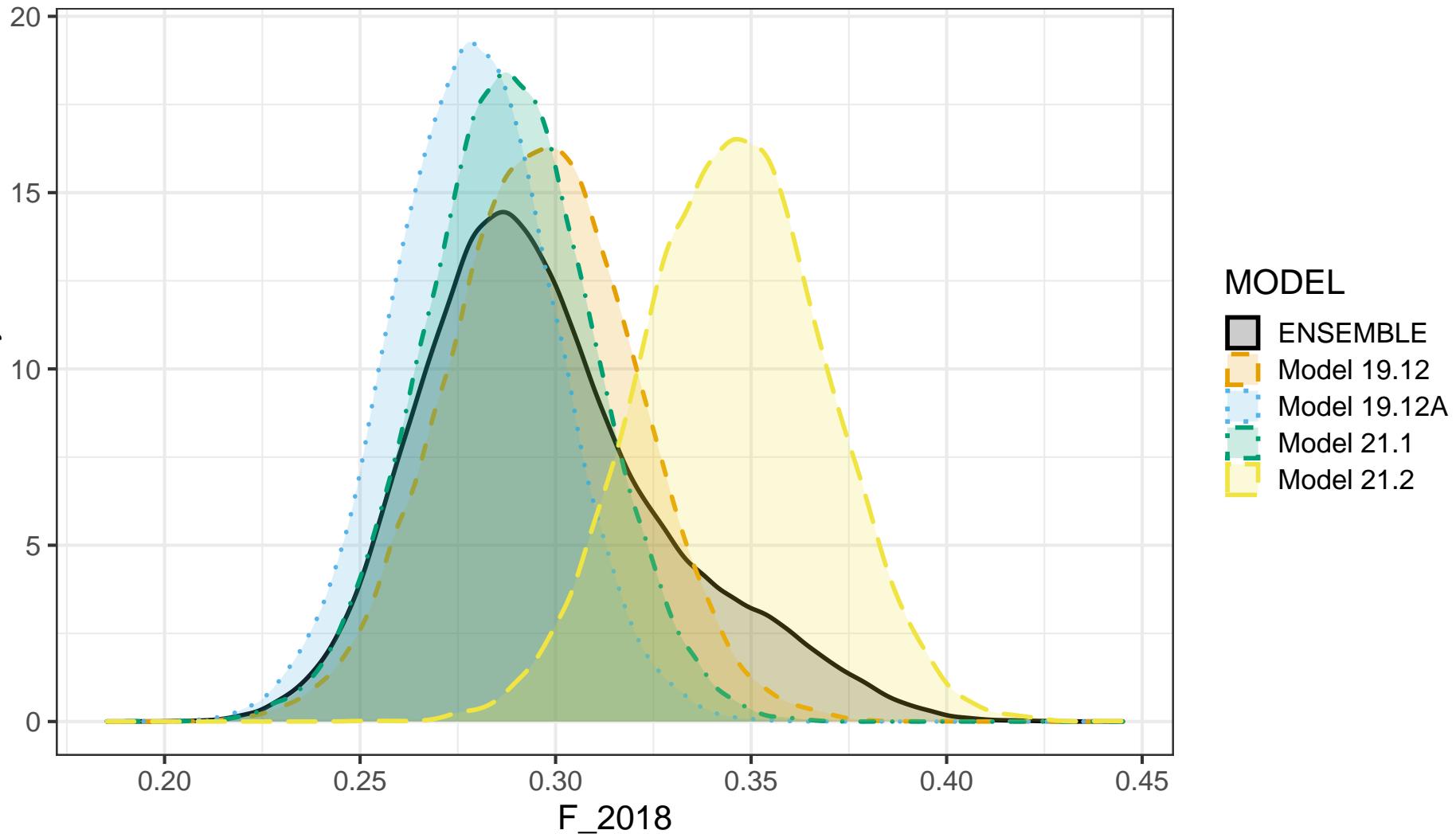


F_2017

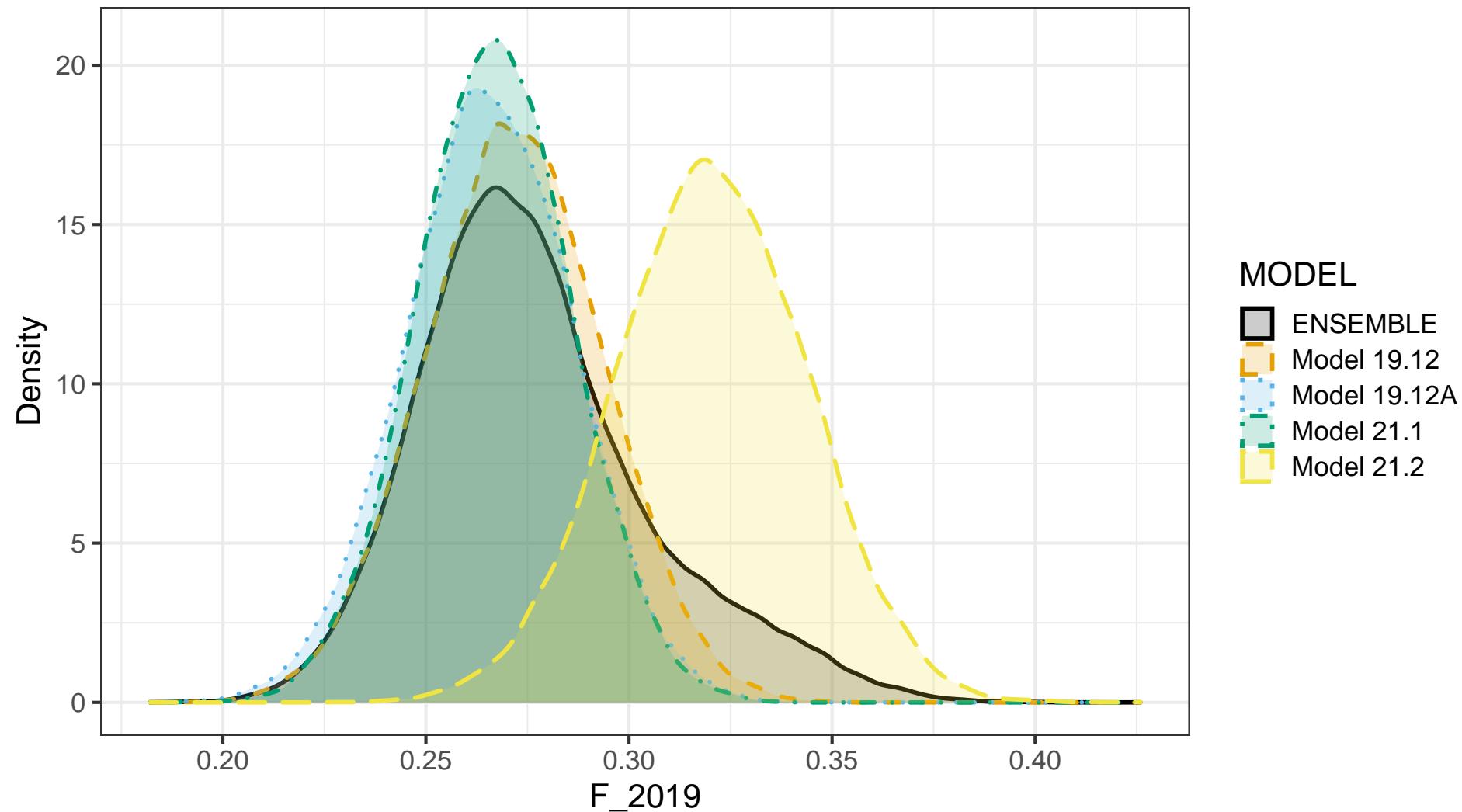


F_2018

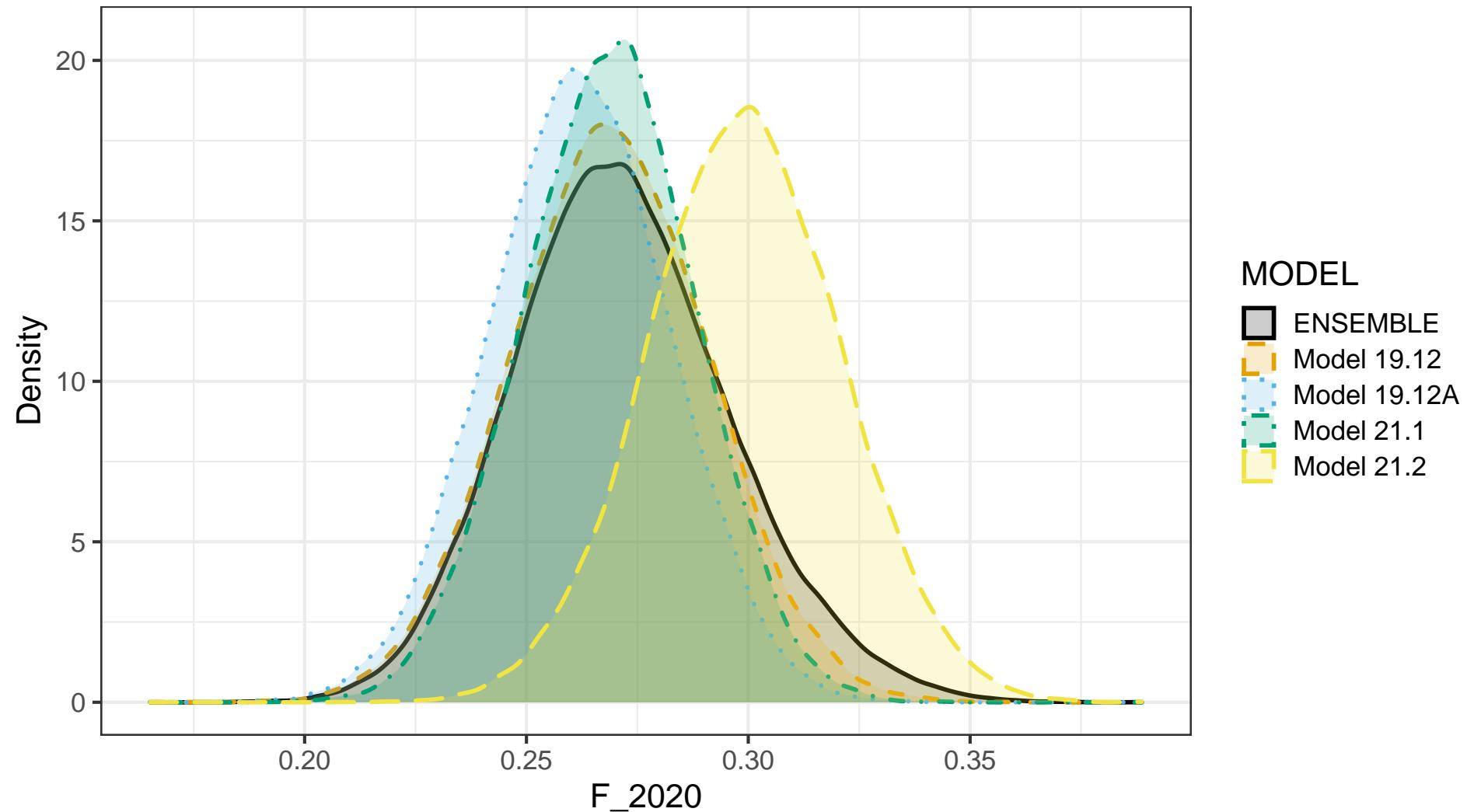
Density



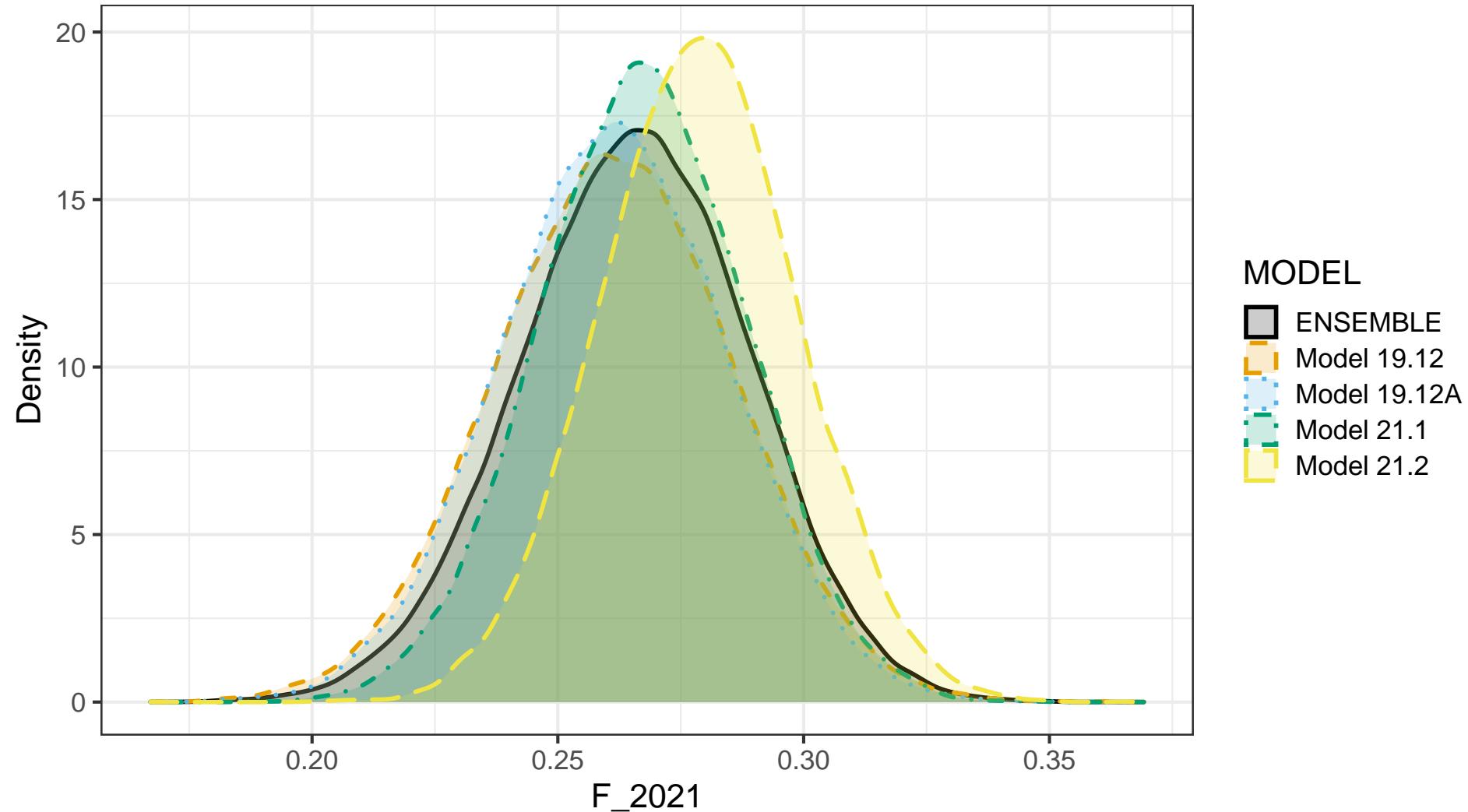
F_2019



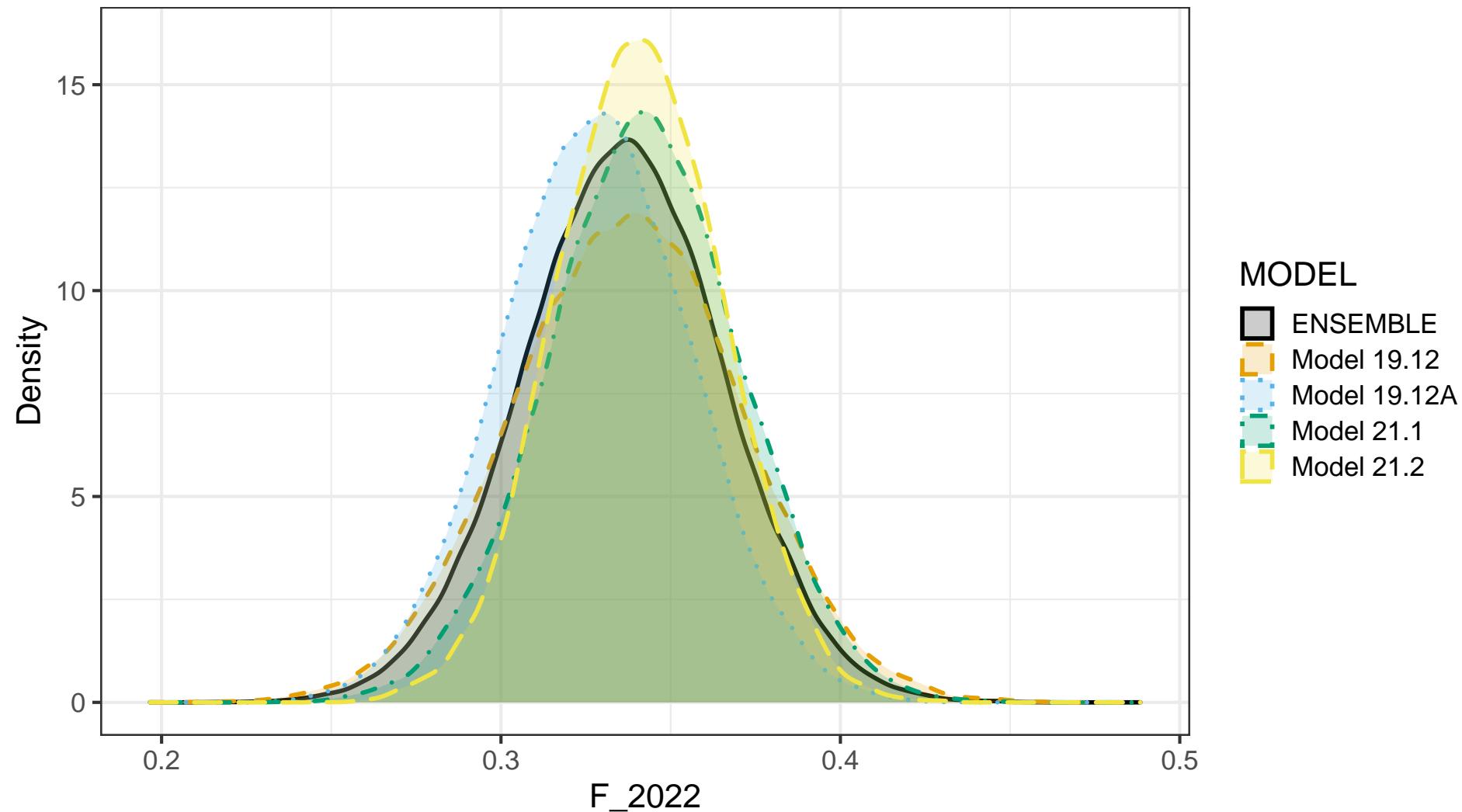
F_2020



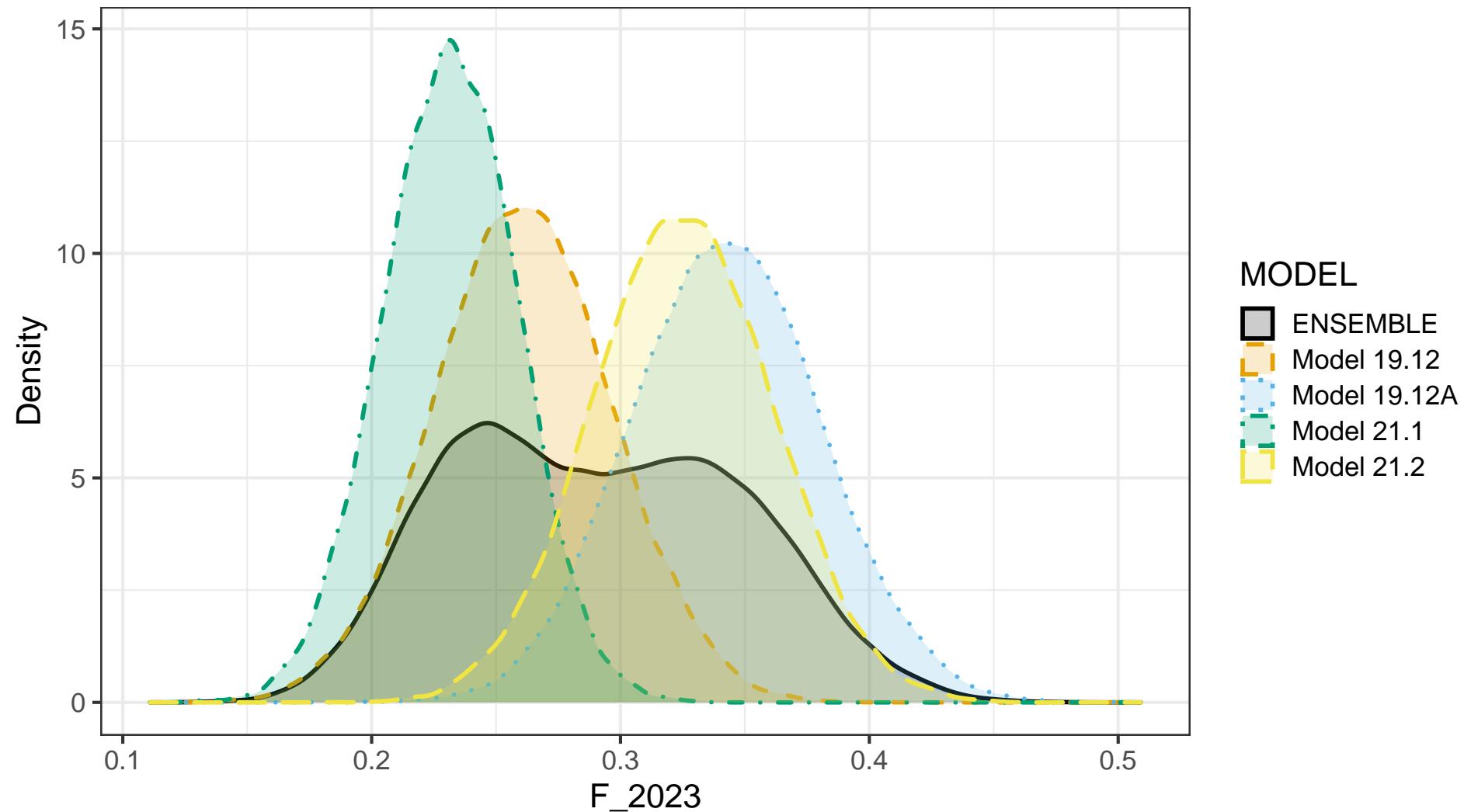
F_2021



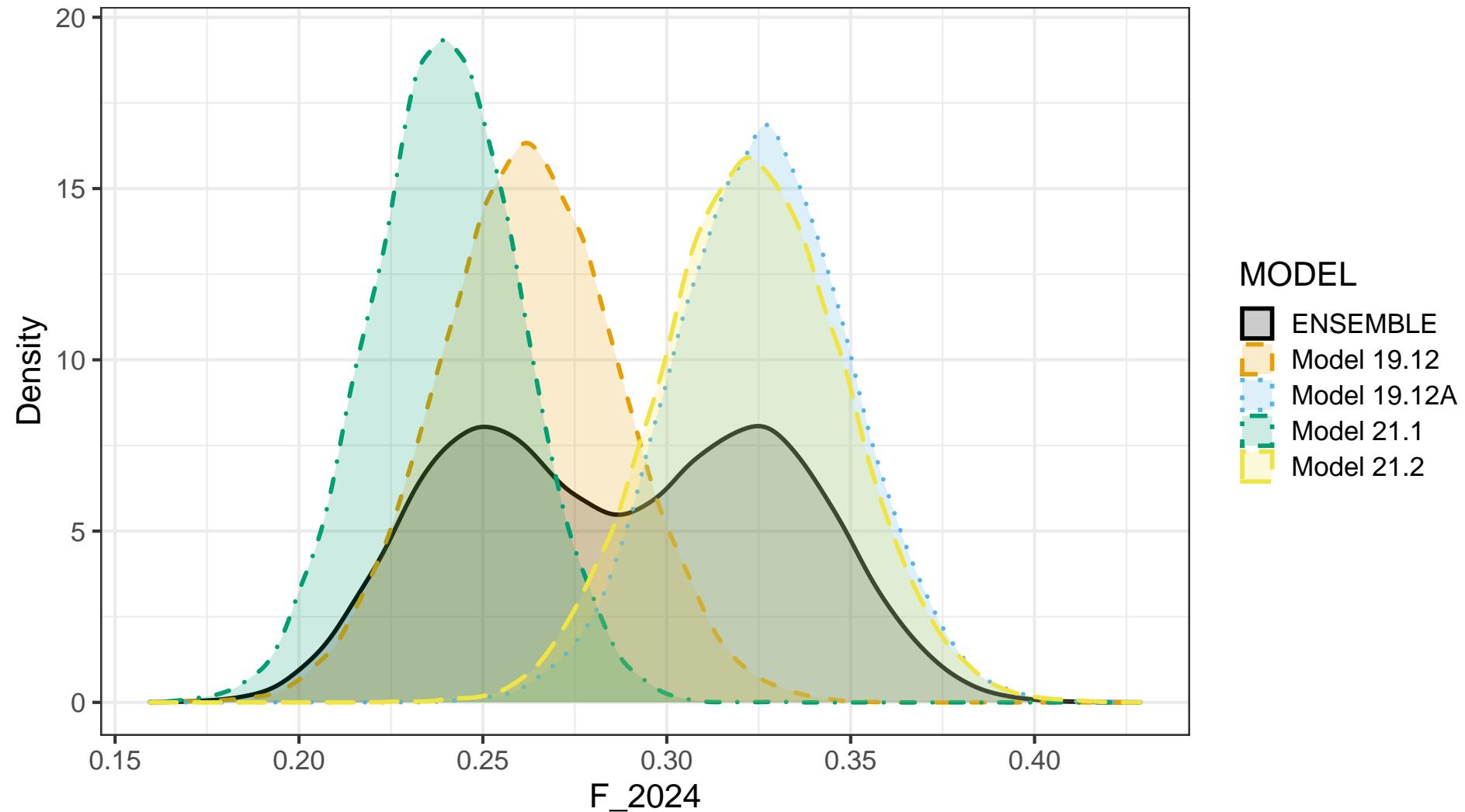
F_2022



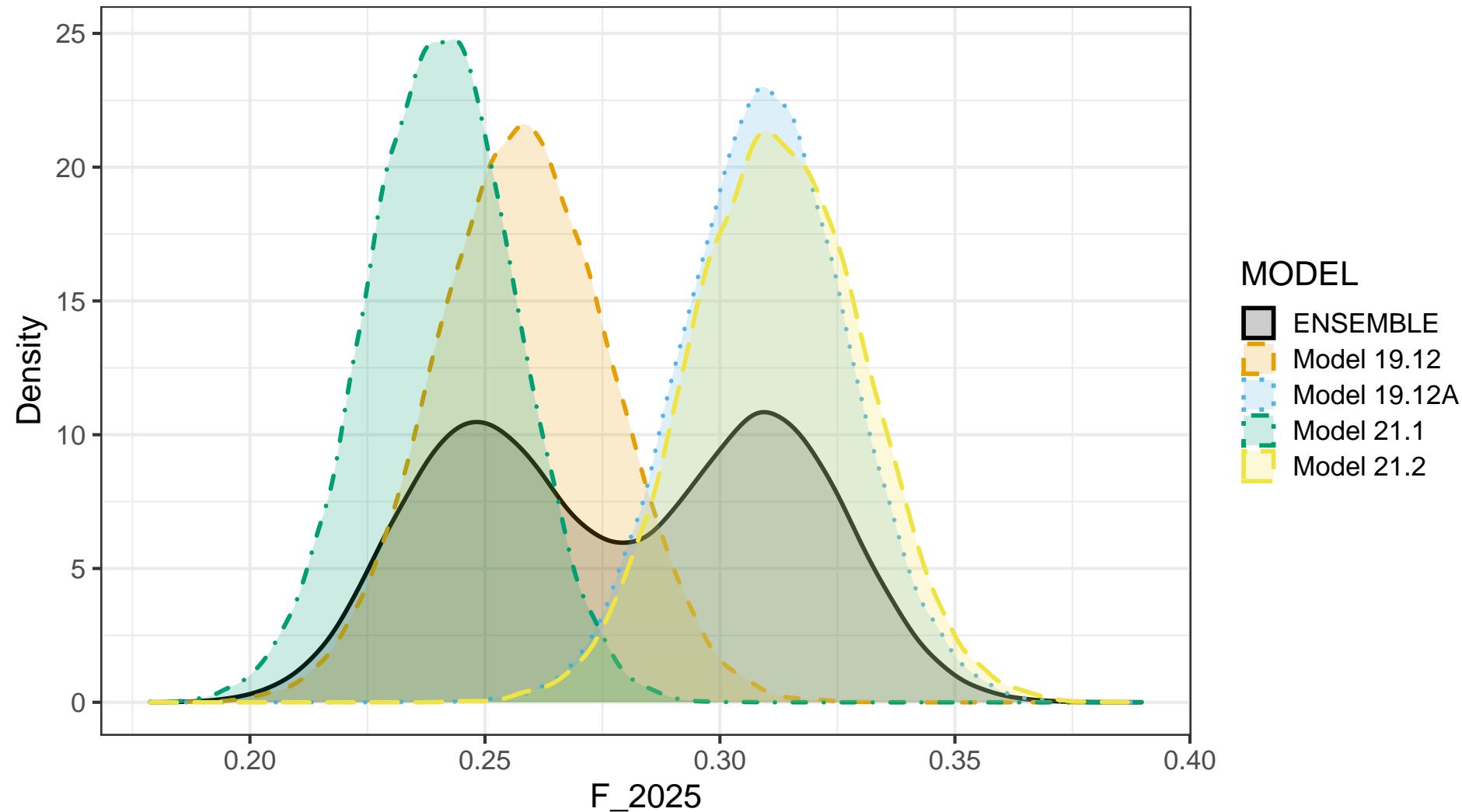
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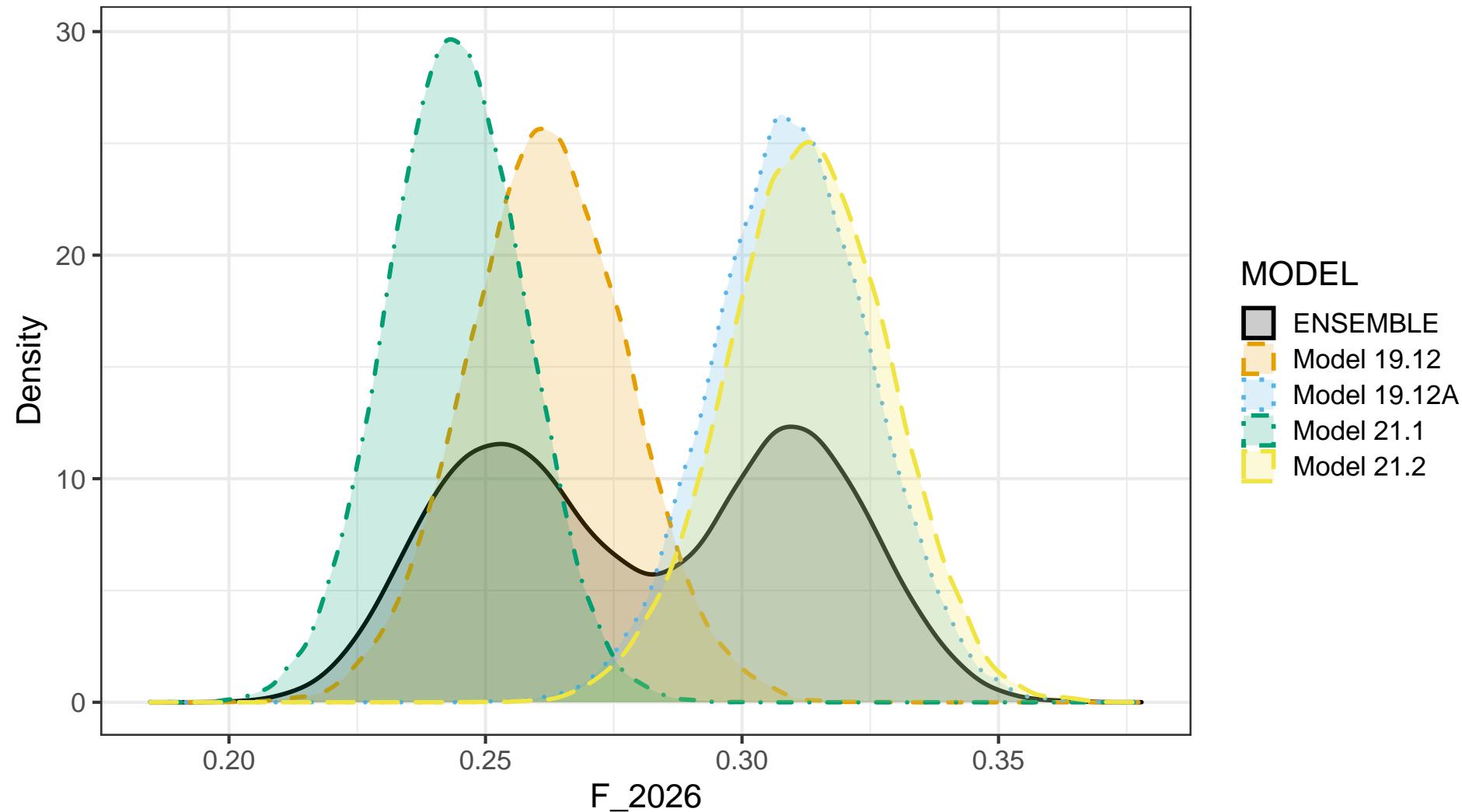
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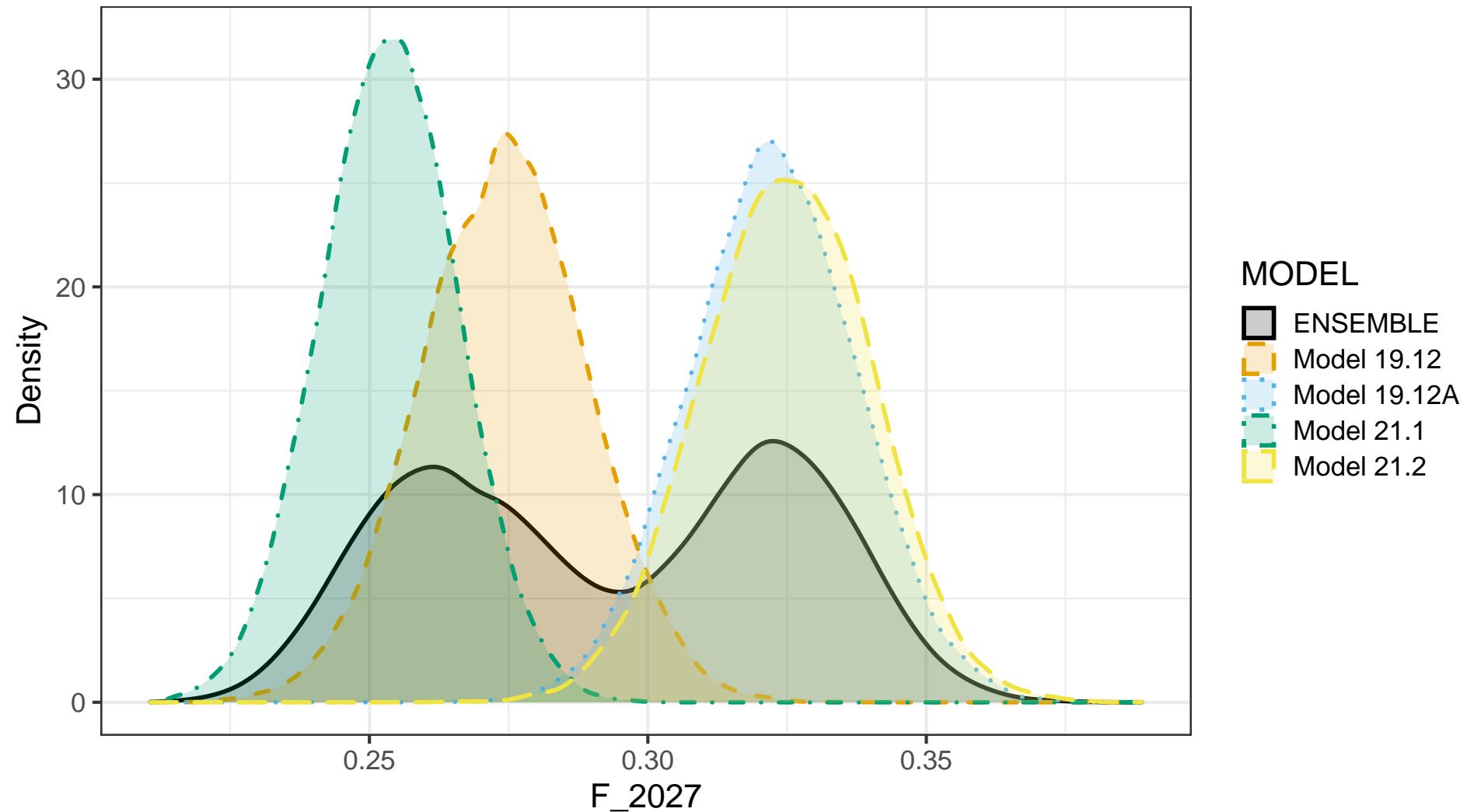
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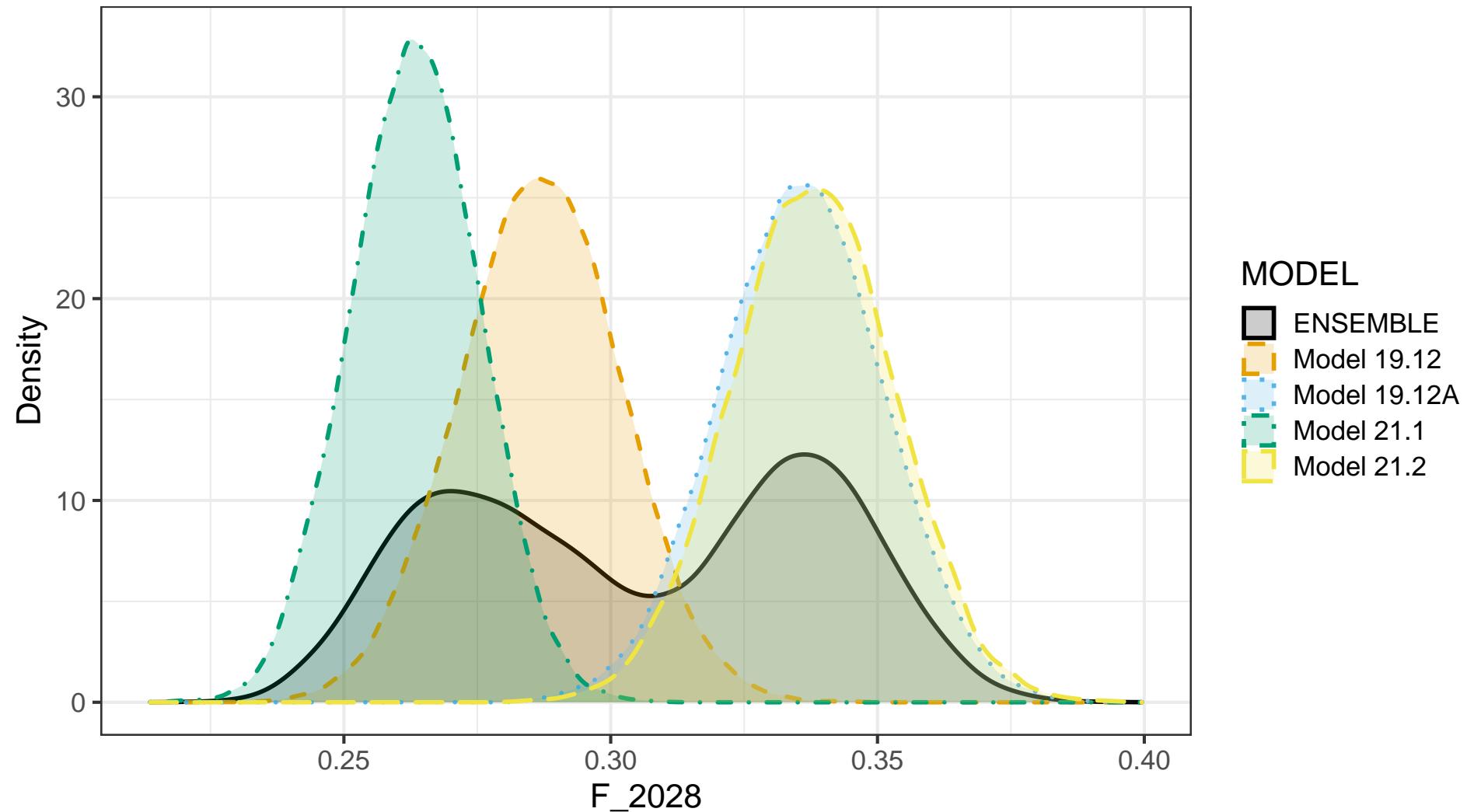
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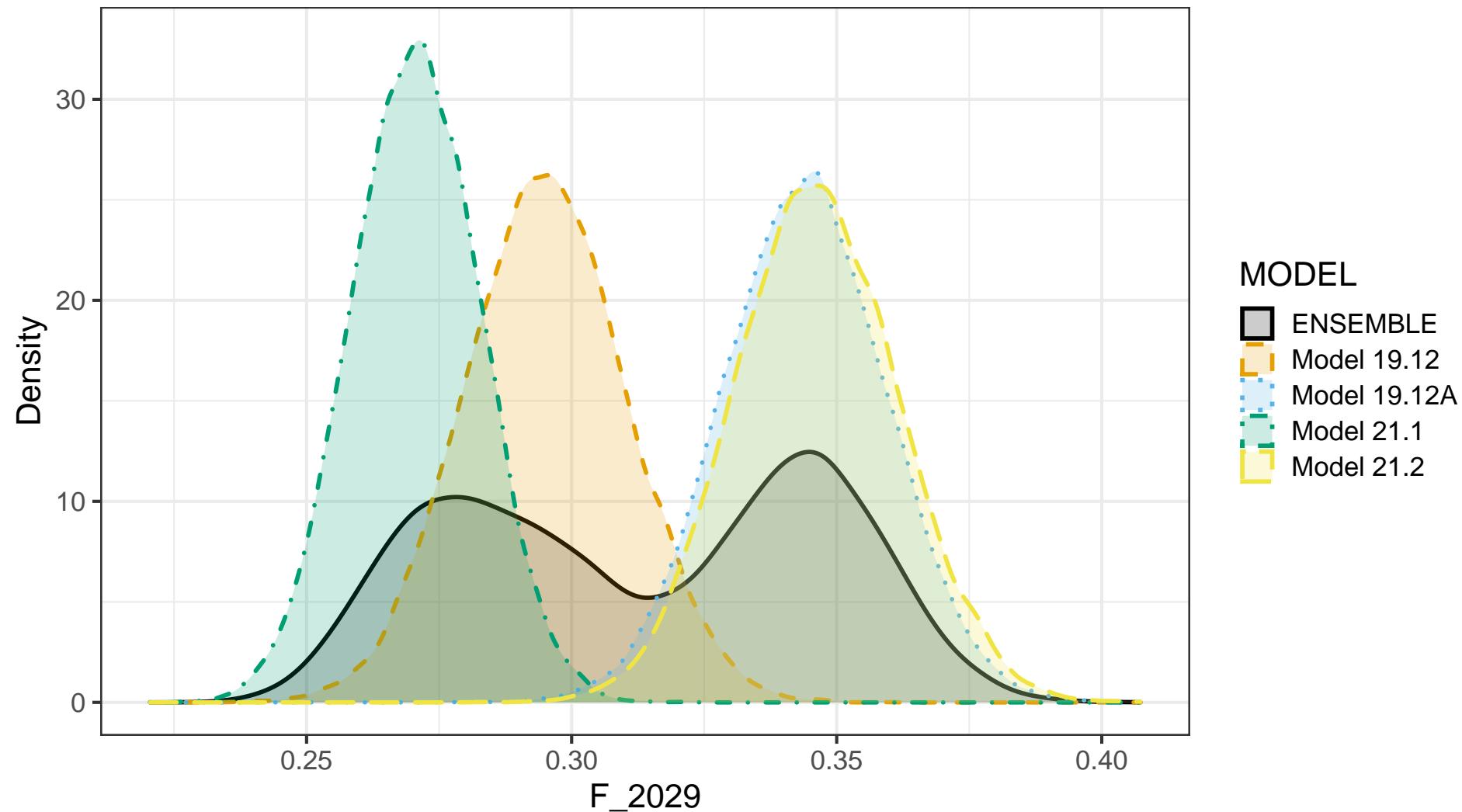
F_2027



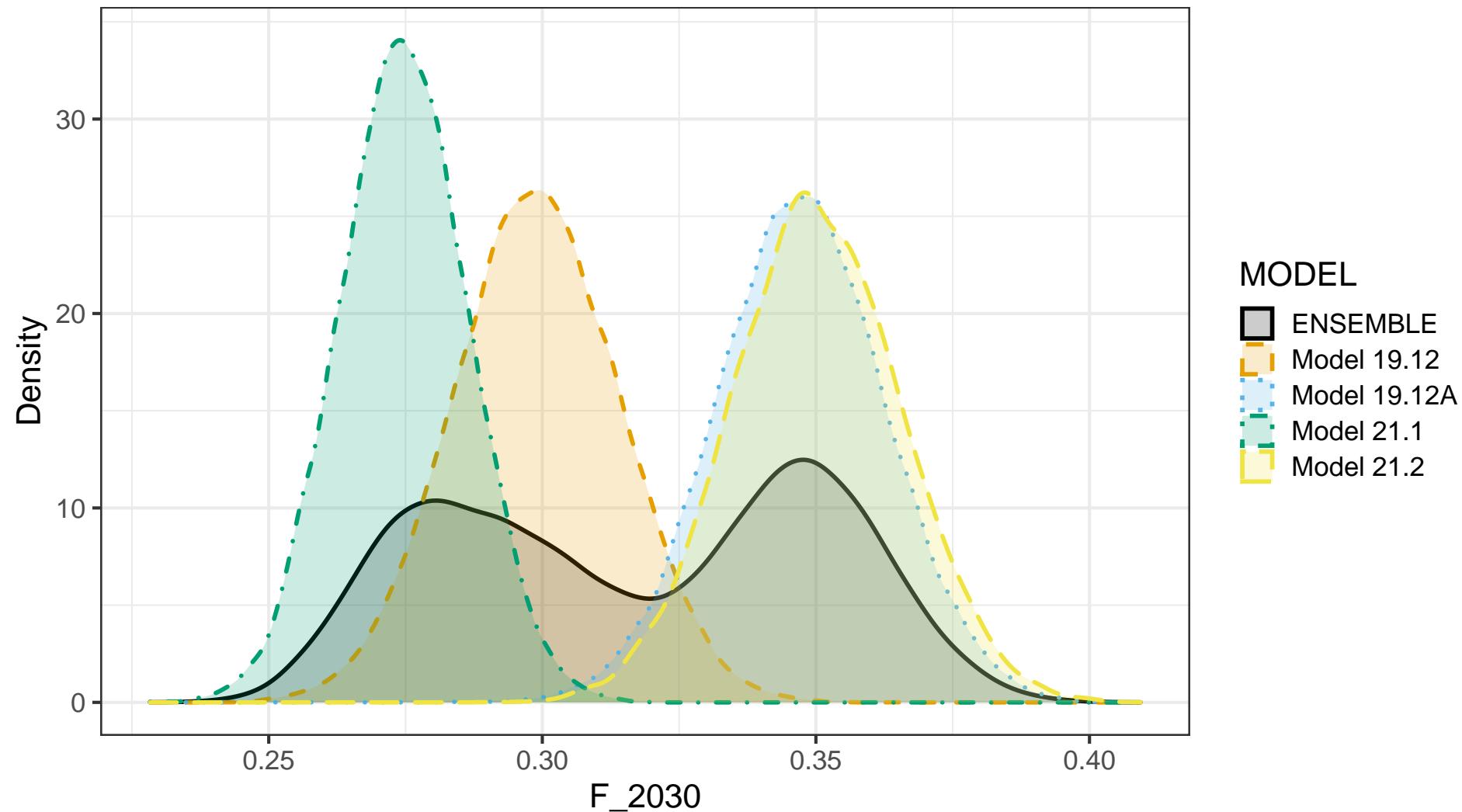
F_2028



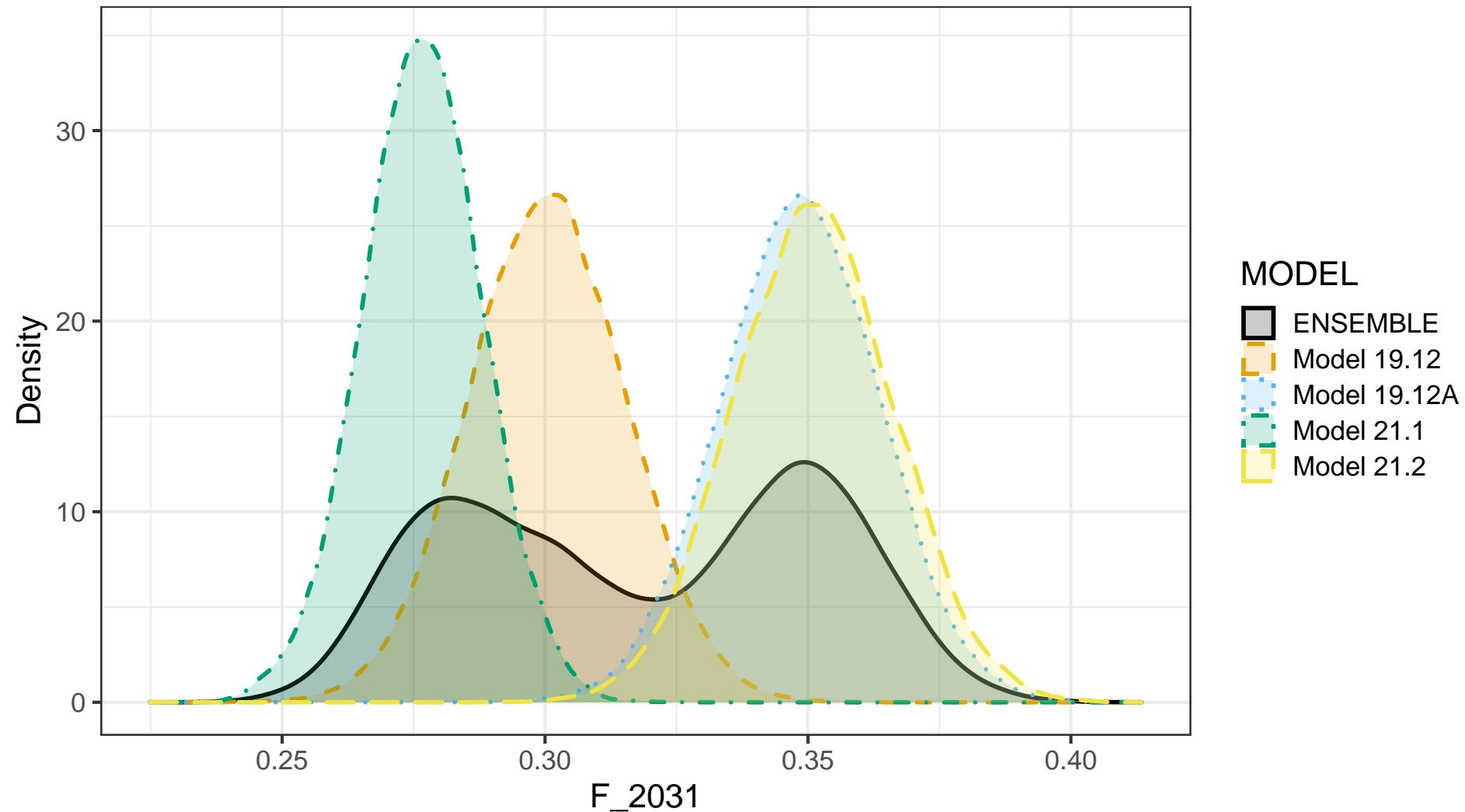
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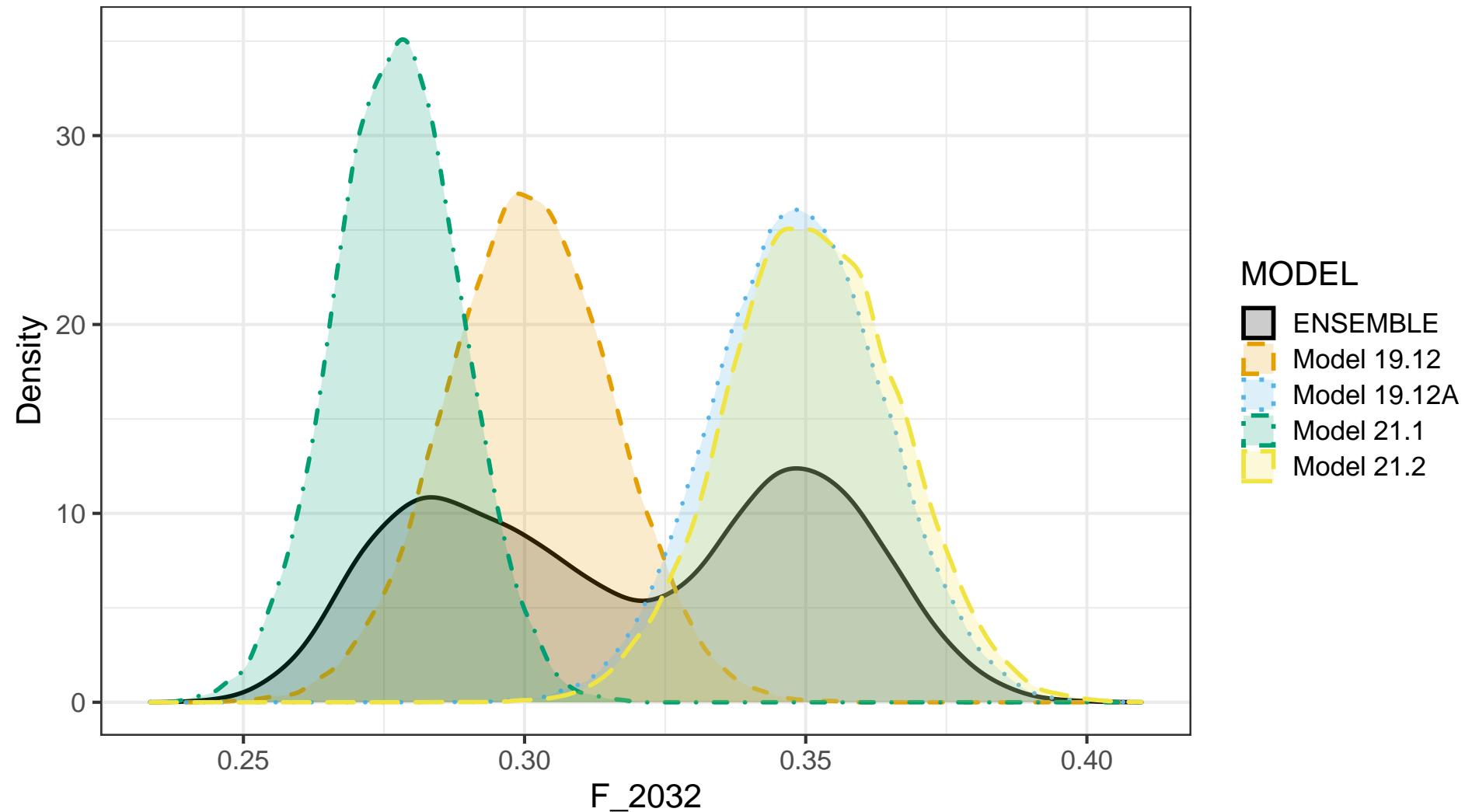
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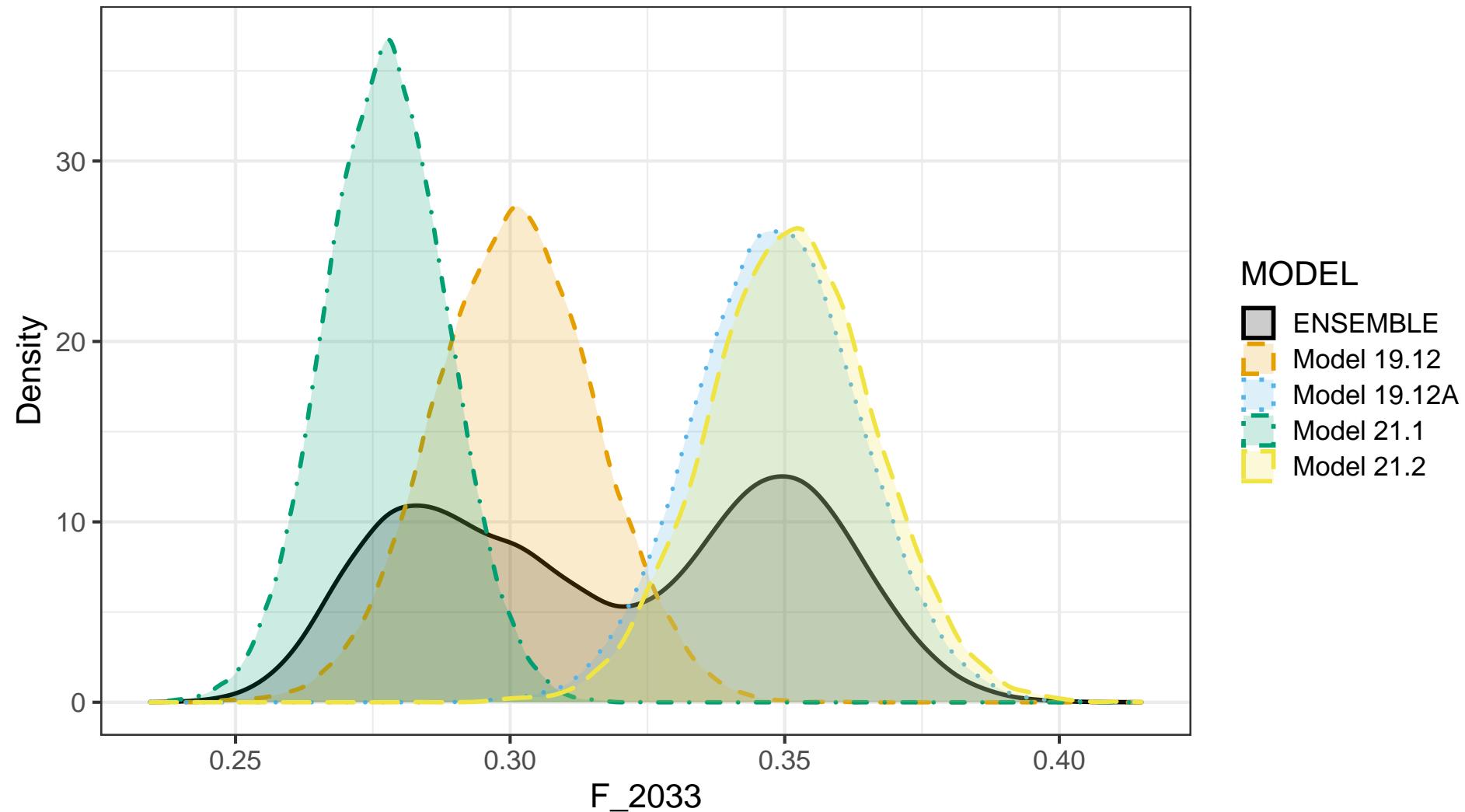
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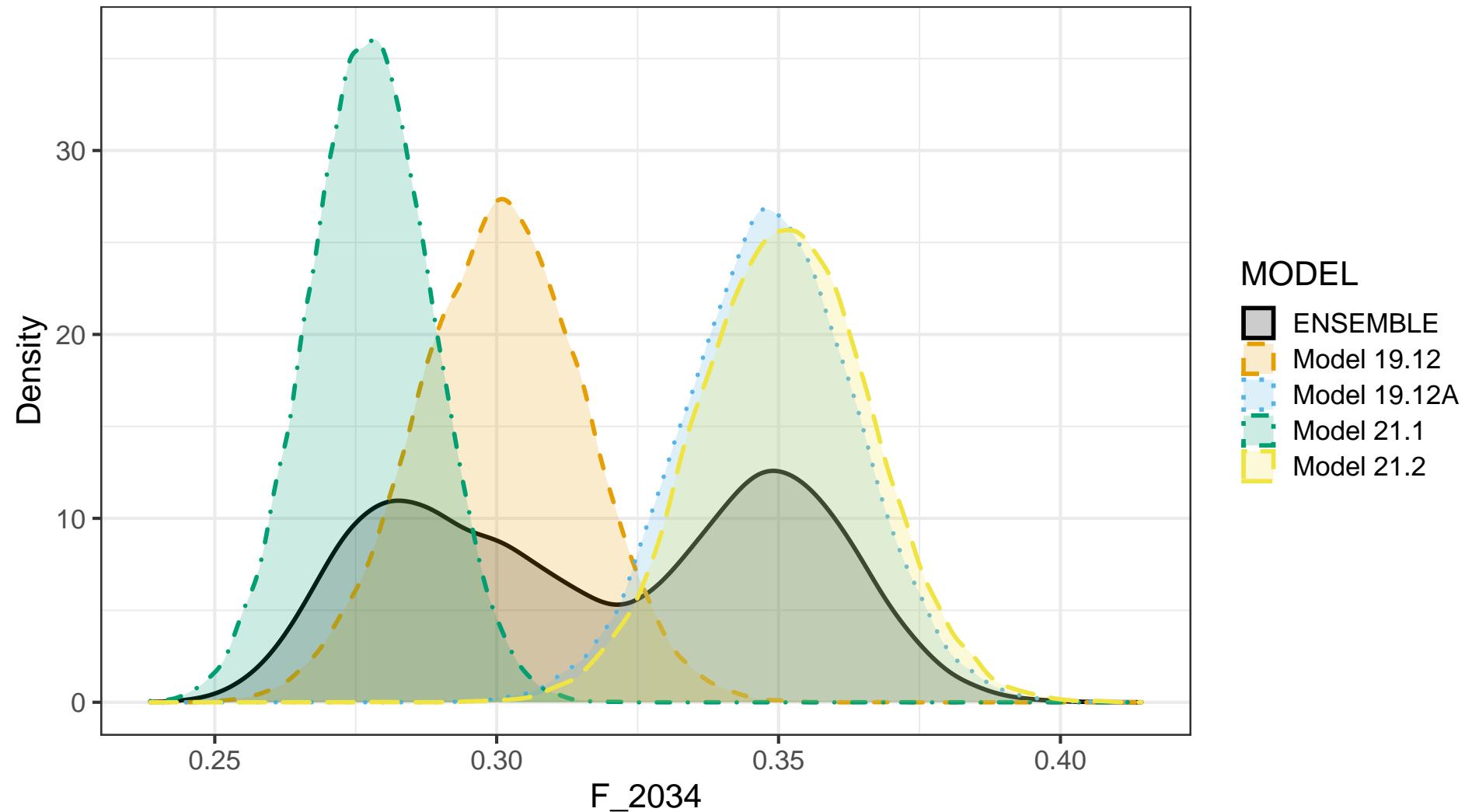
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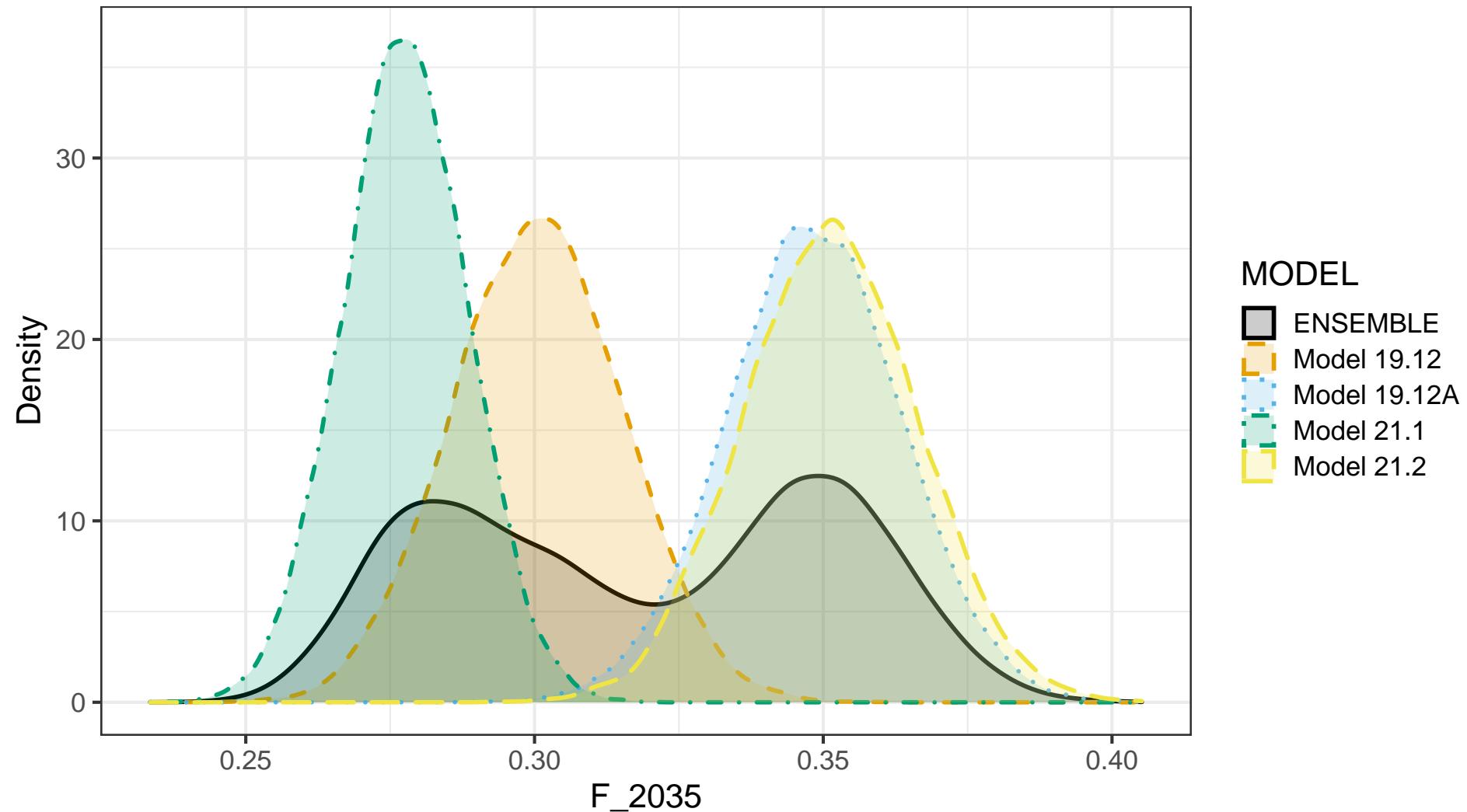
F_2033



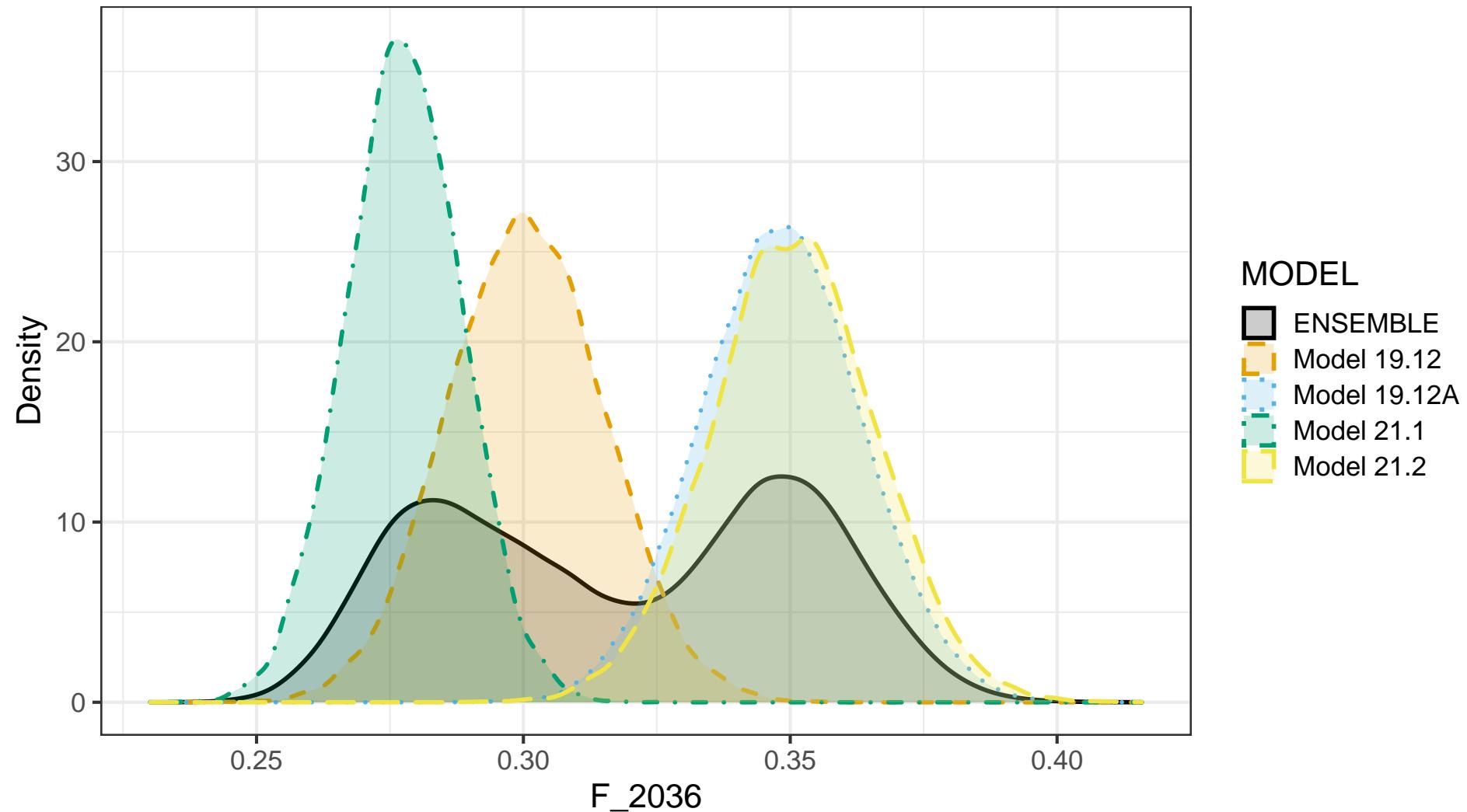
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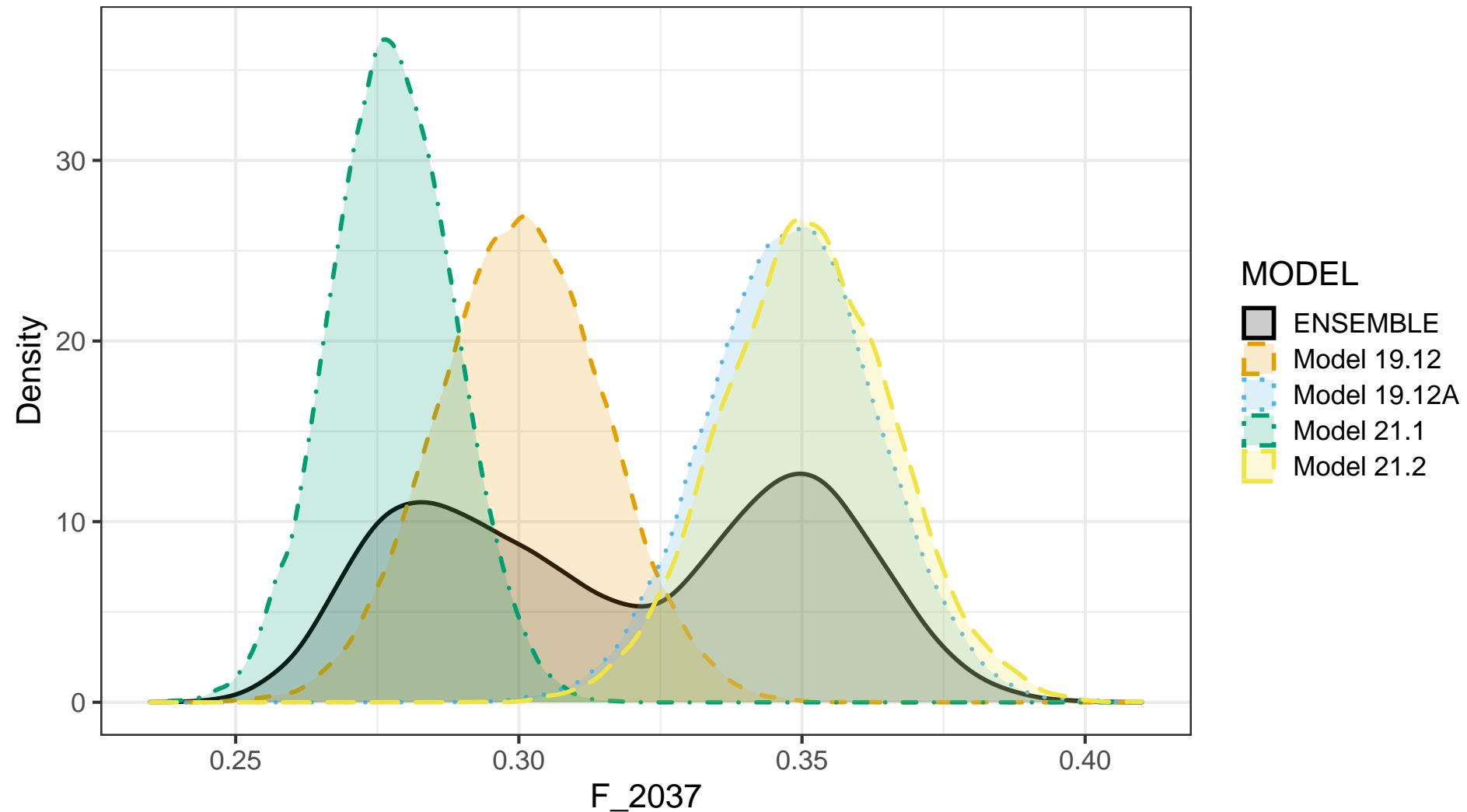
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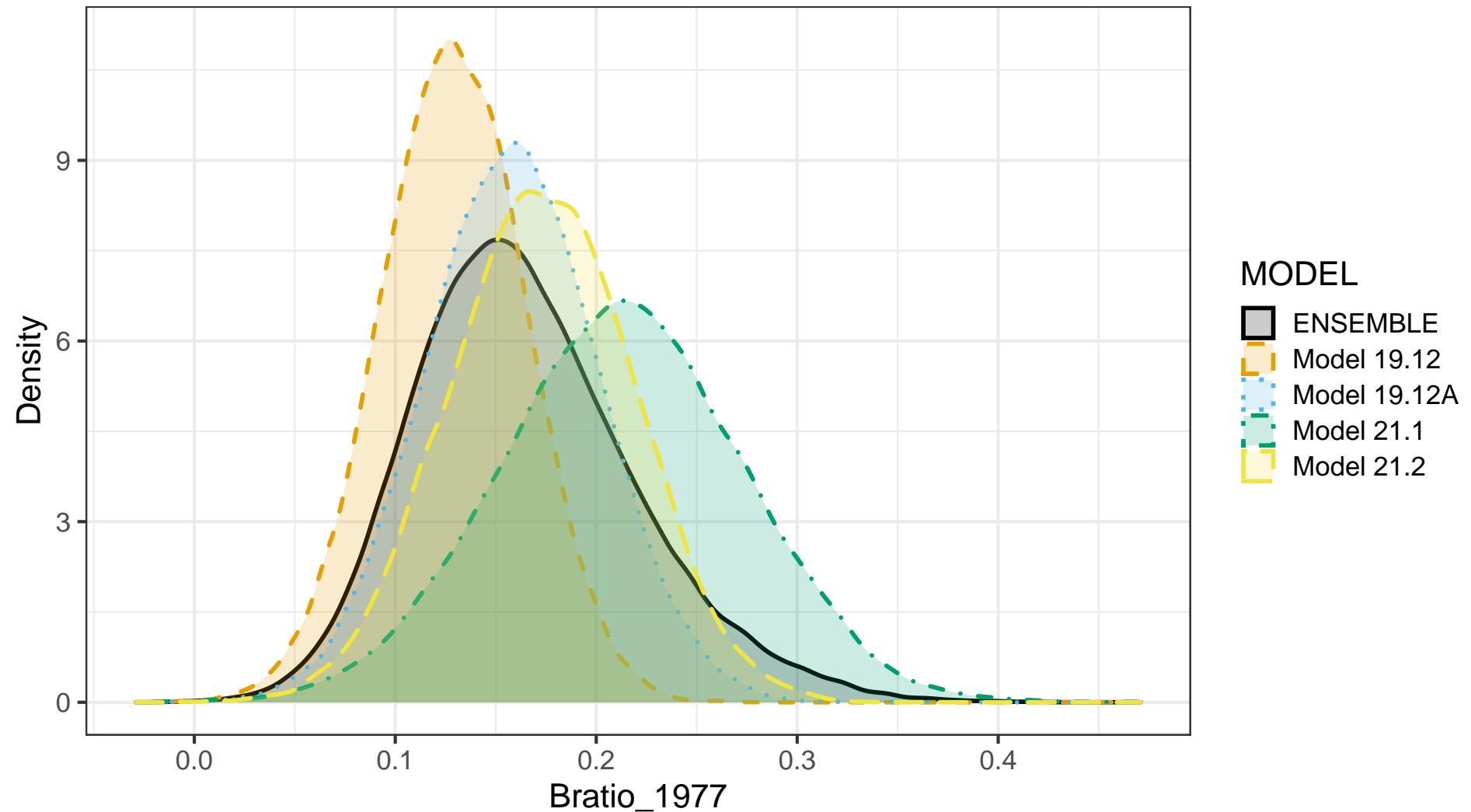
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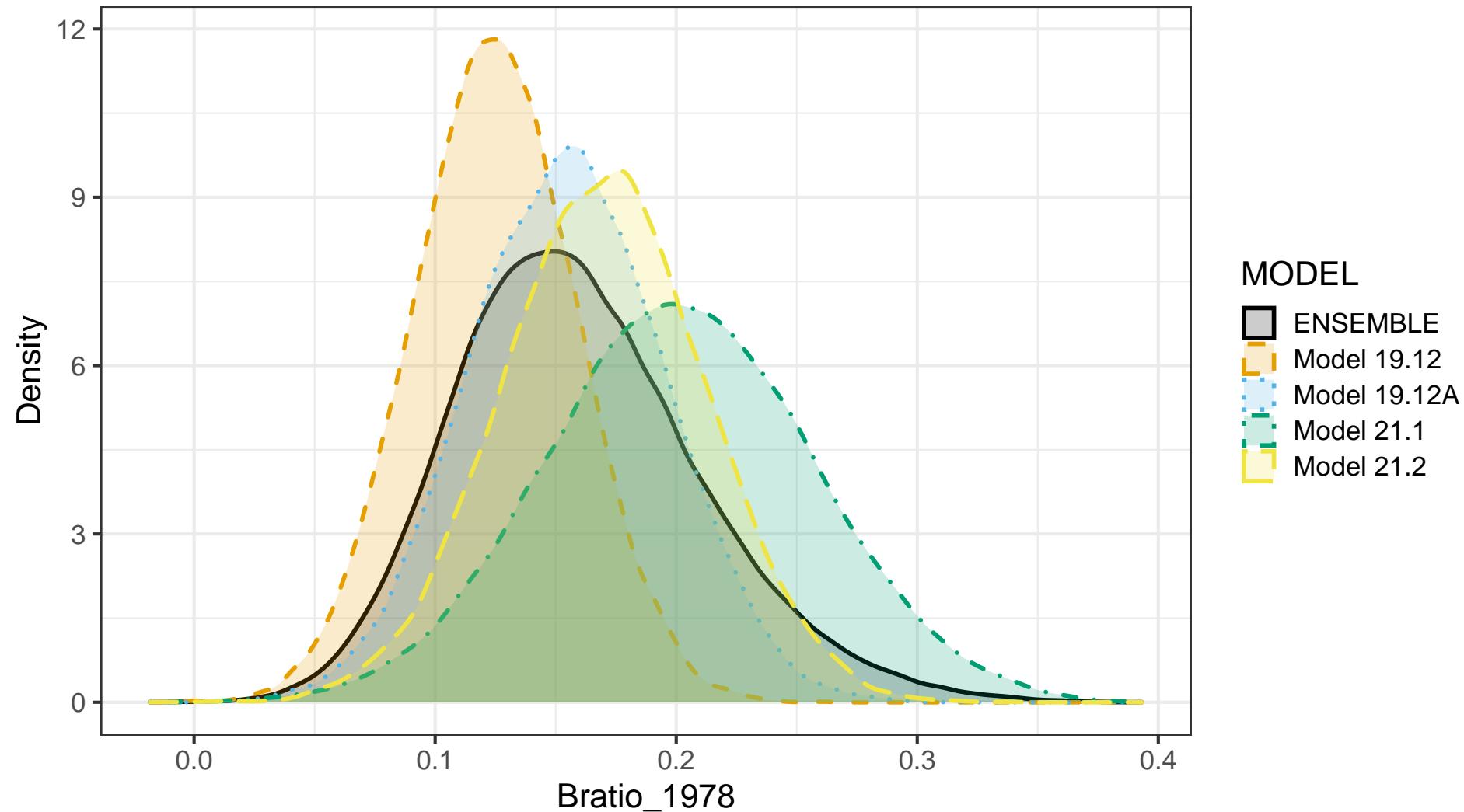
F_2037



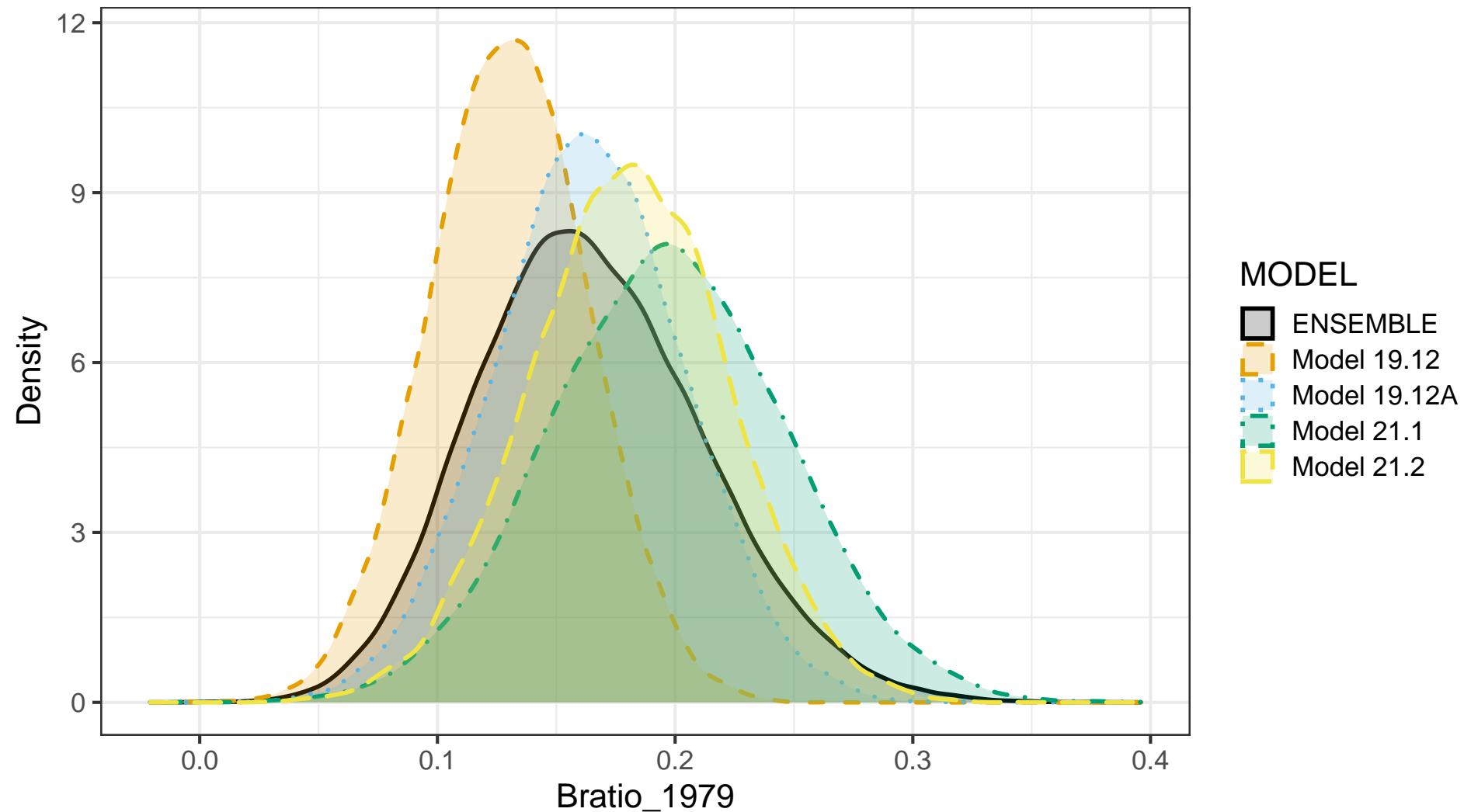
Bratio_1977



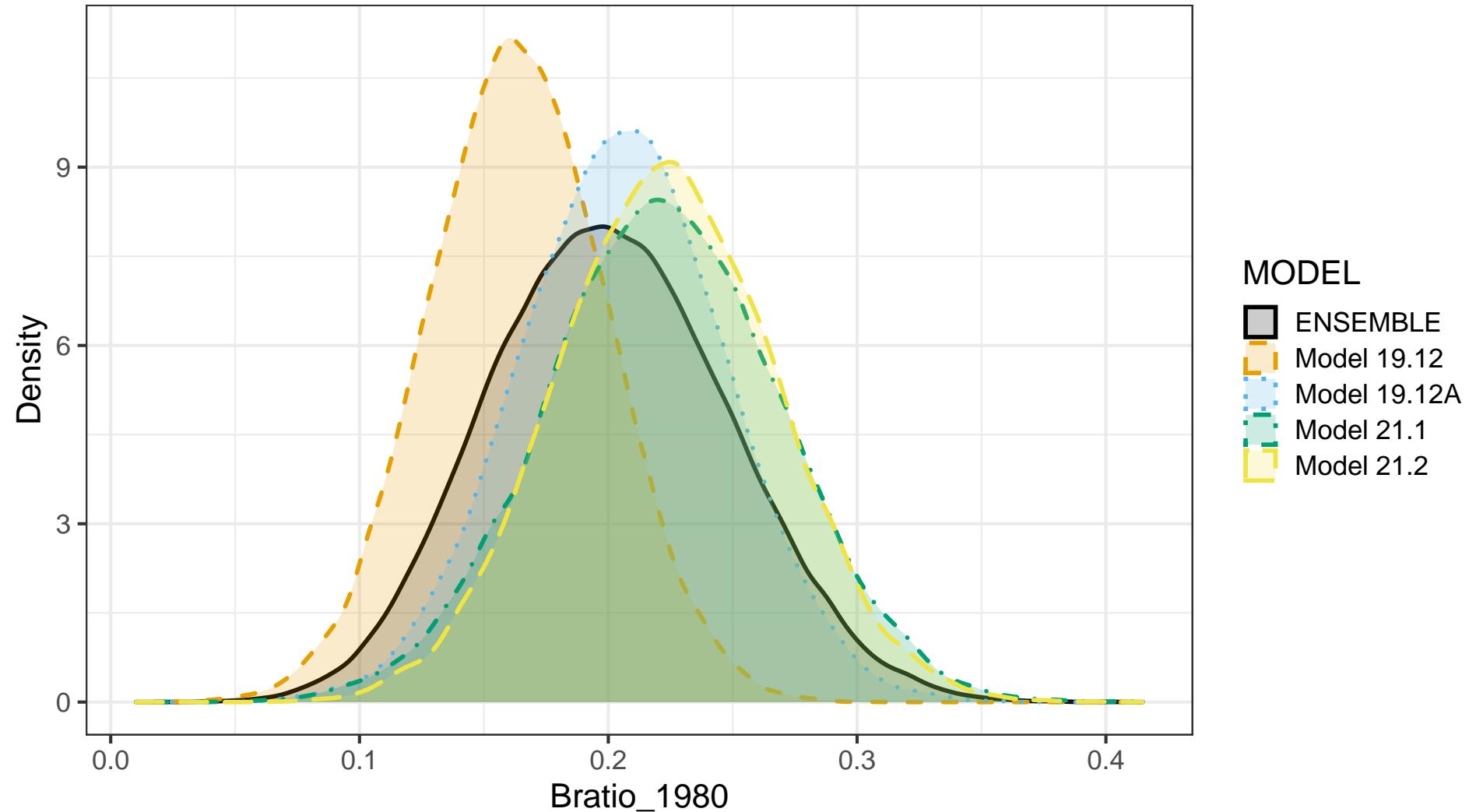
Bratio_1978



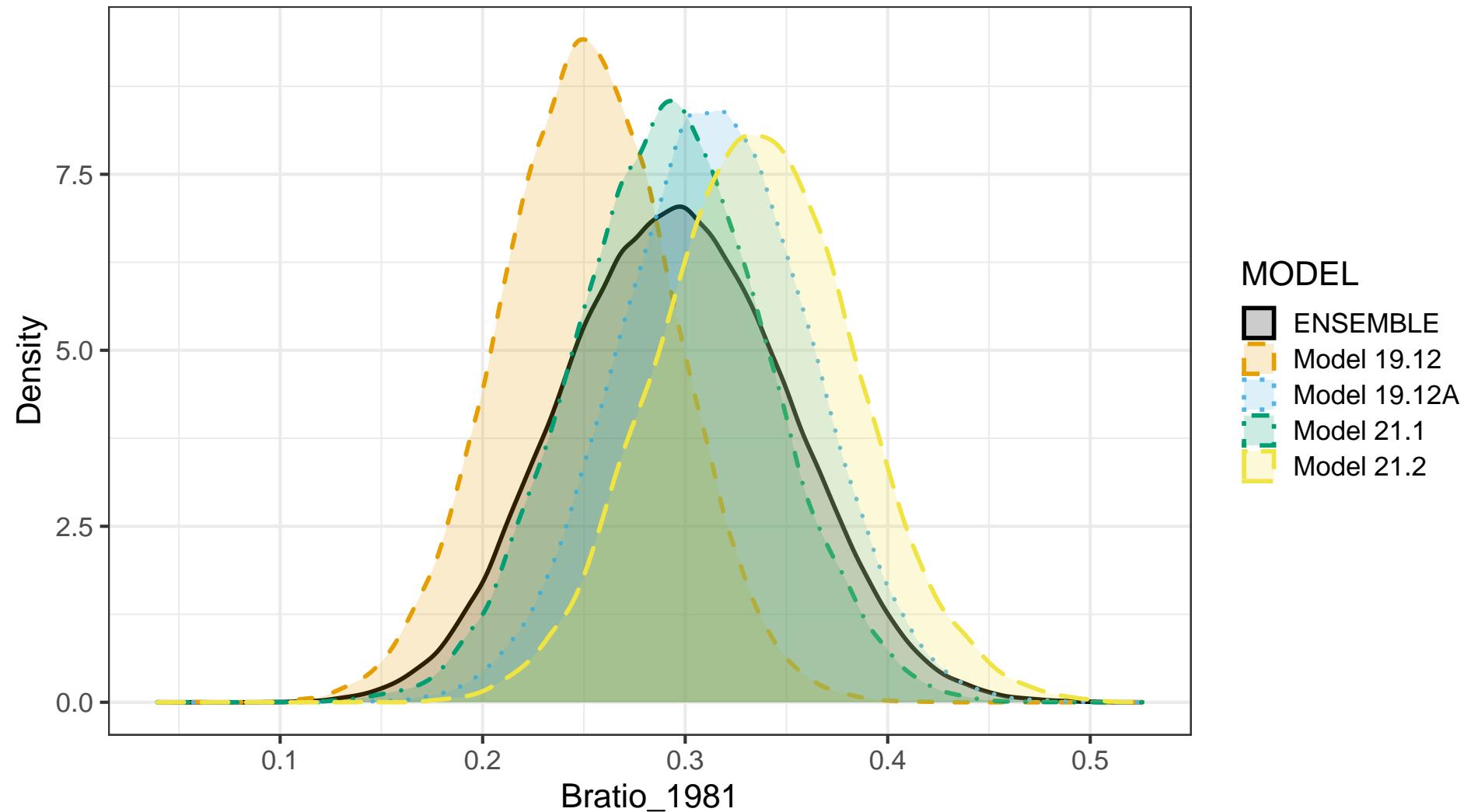
Bratio_1979



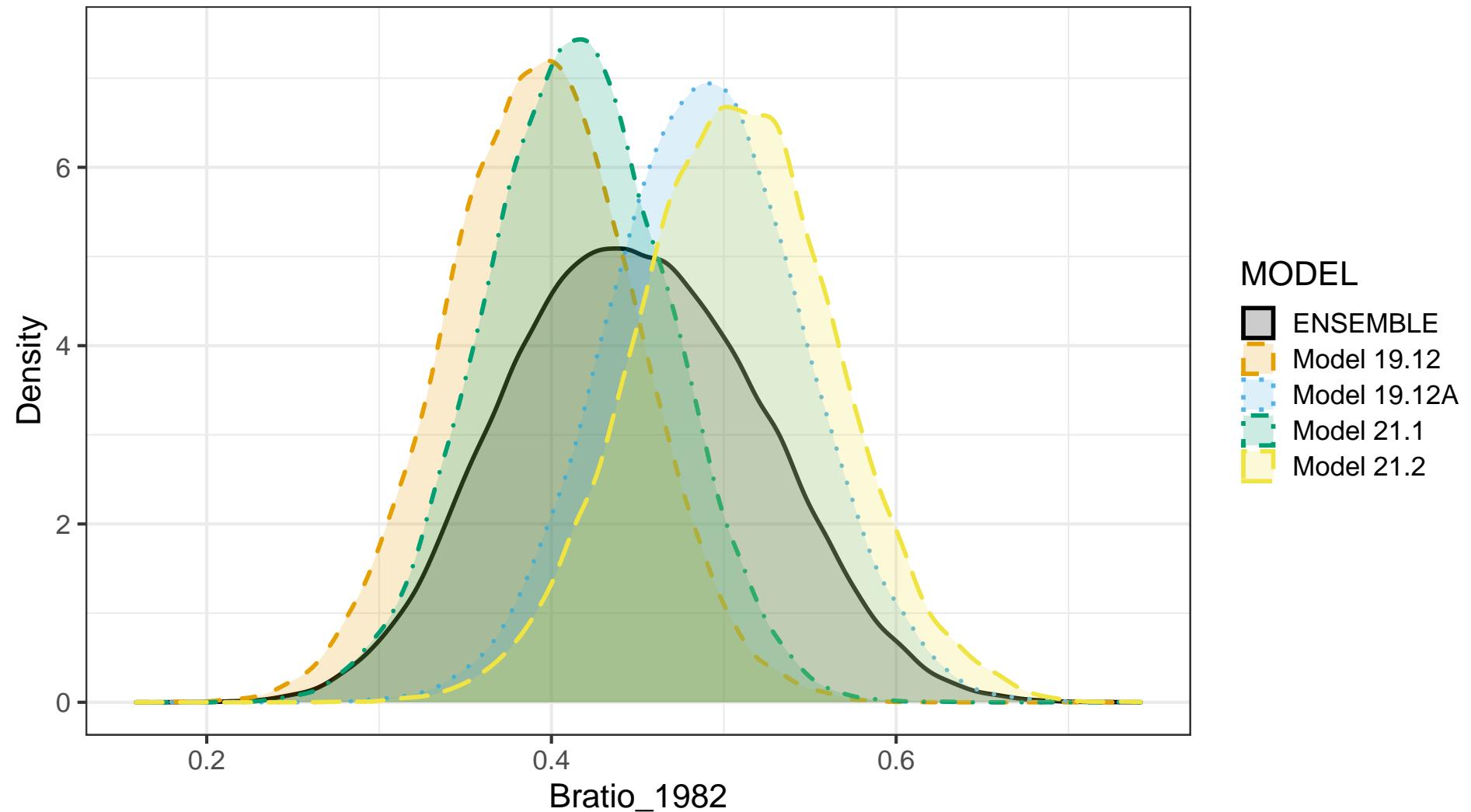
Bratio_1980



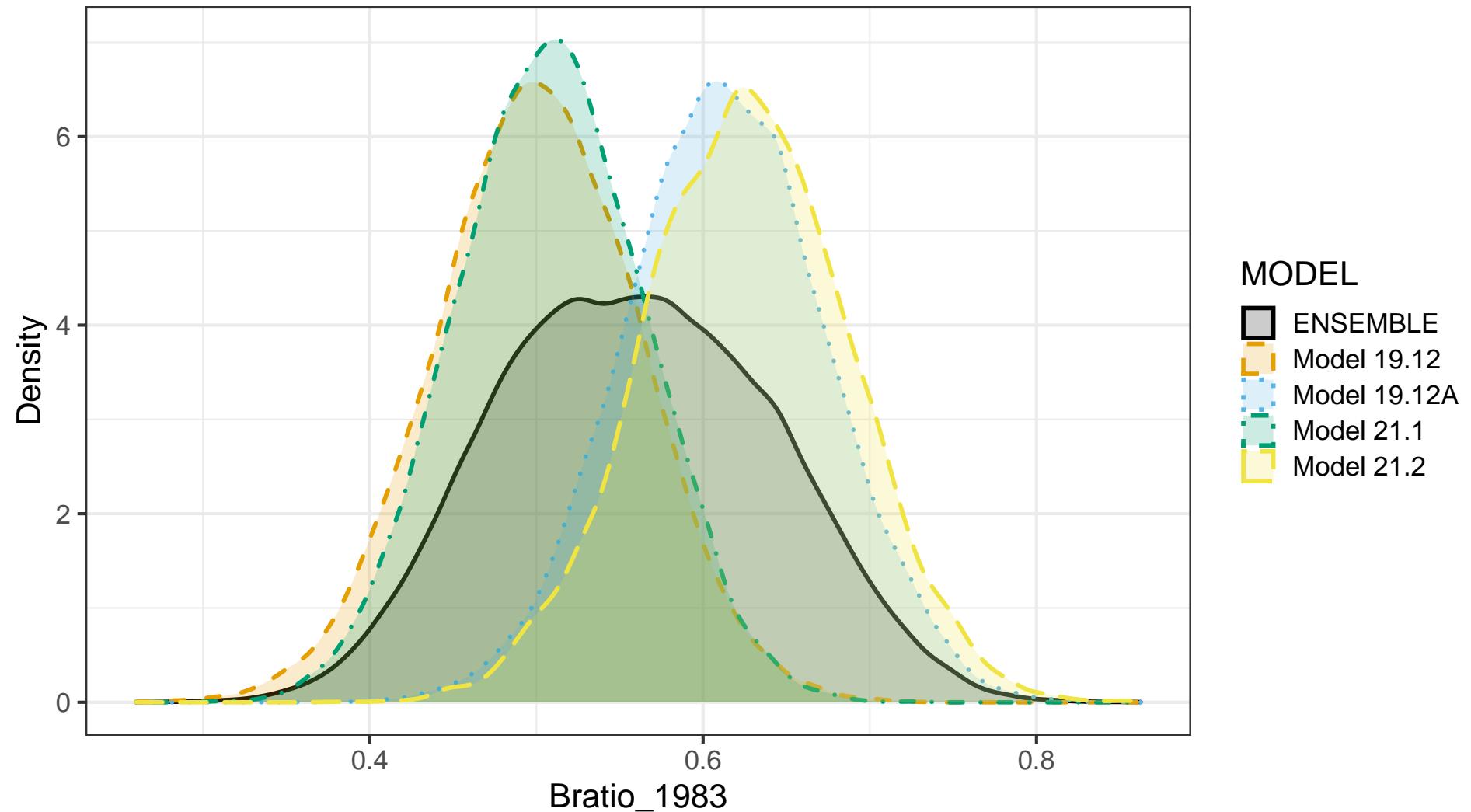
Bratio_1981



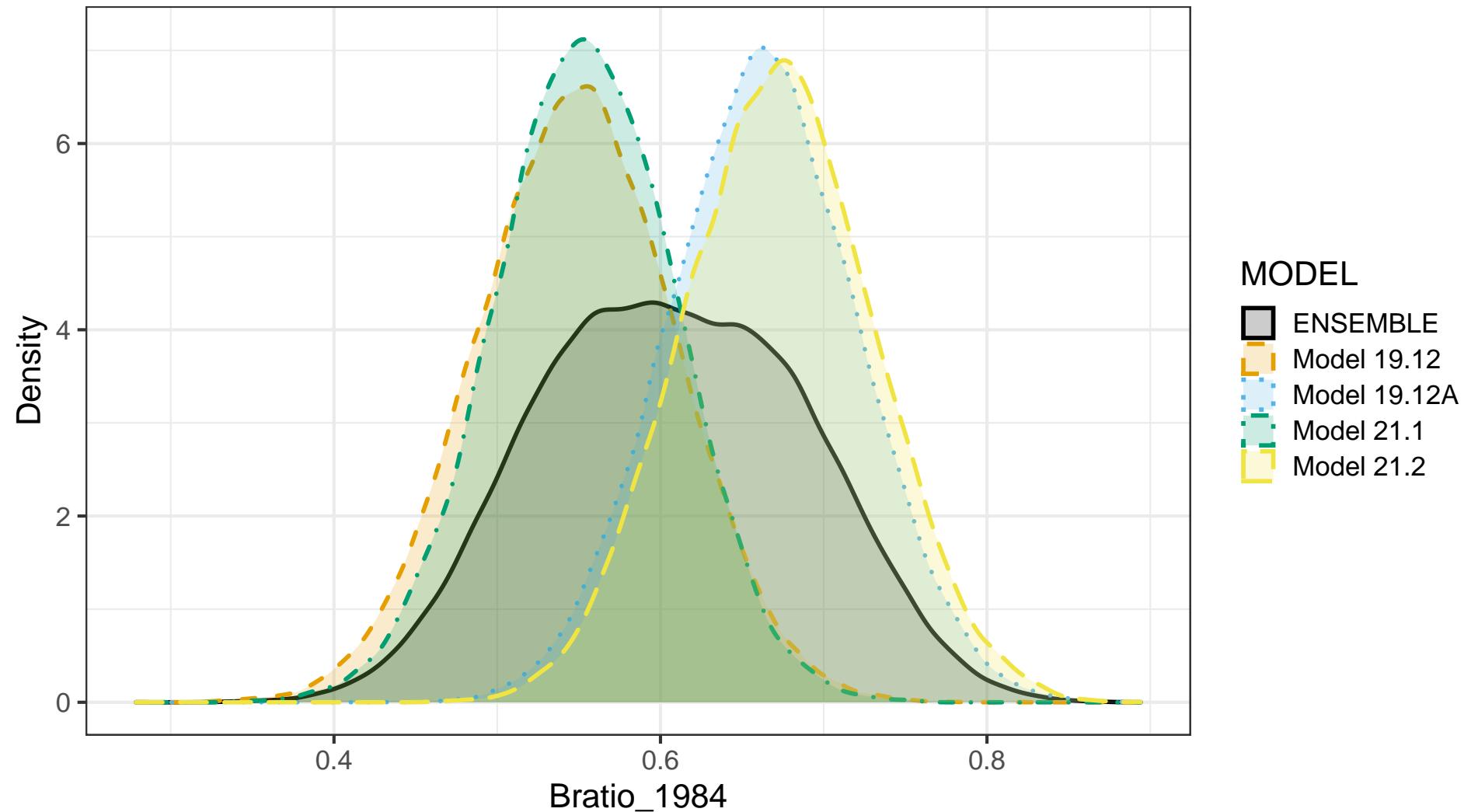
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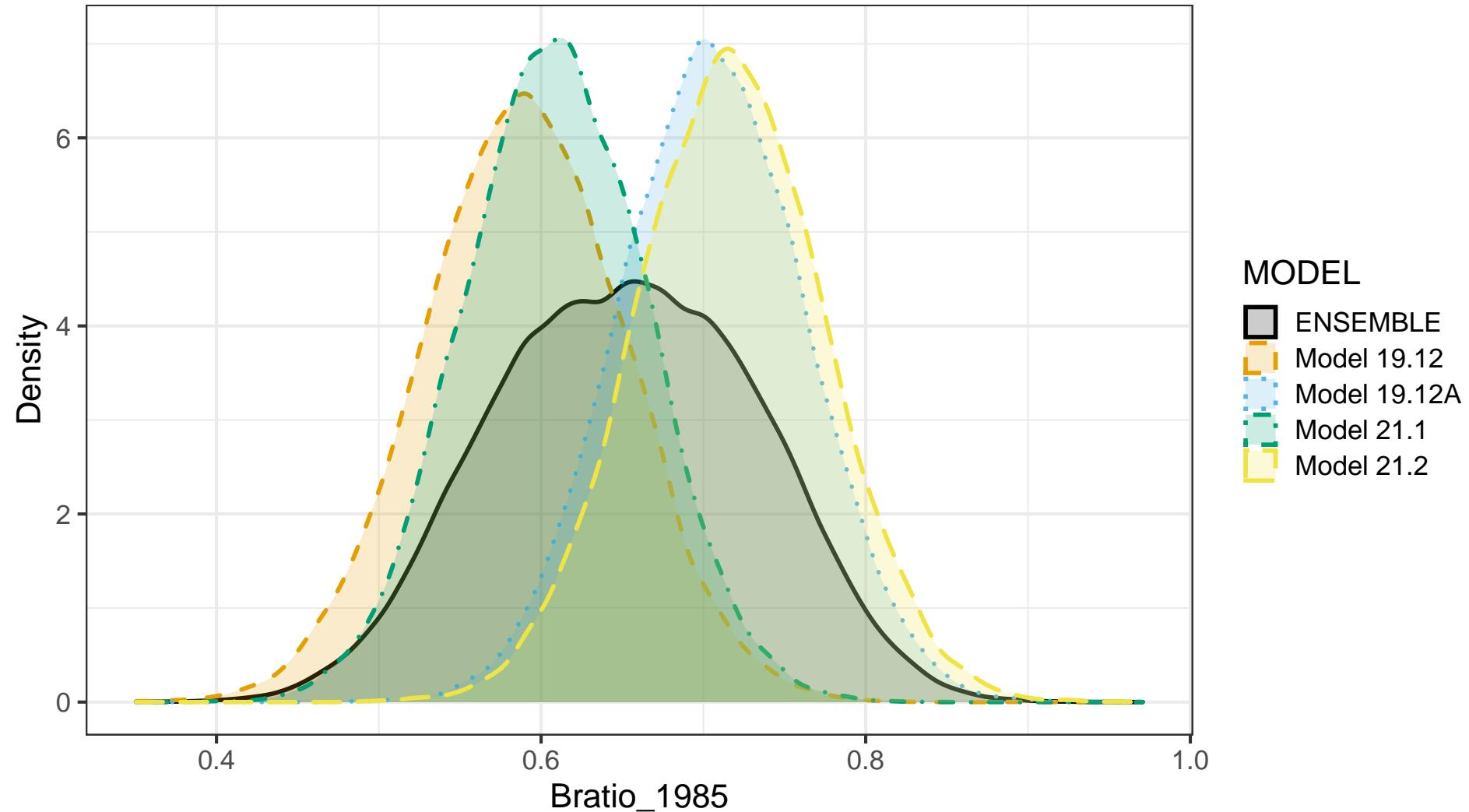
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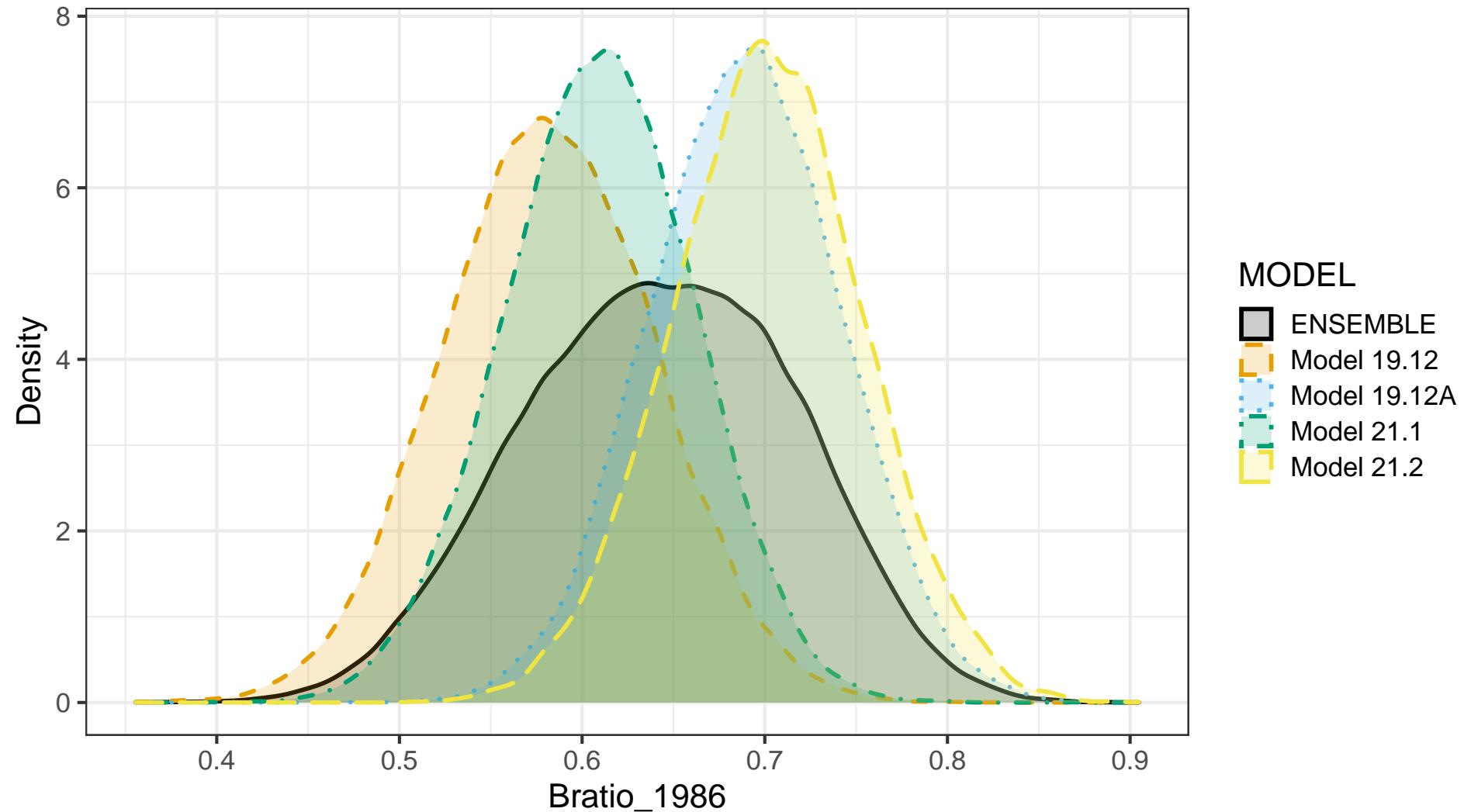
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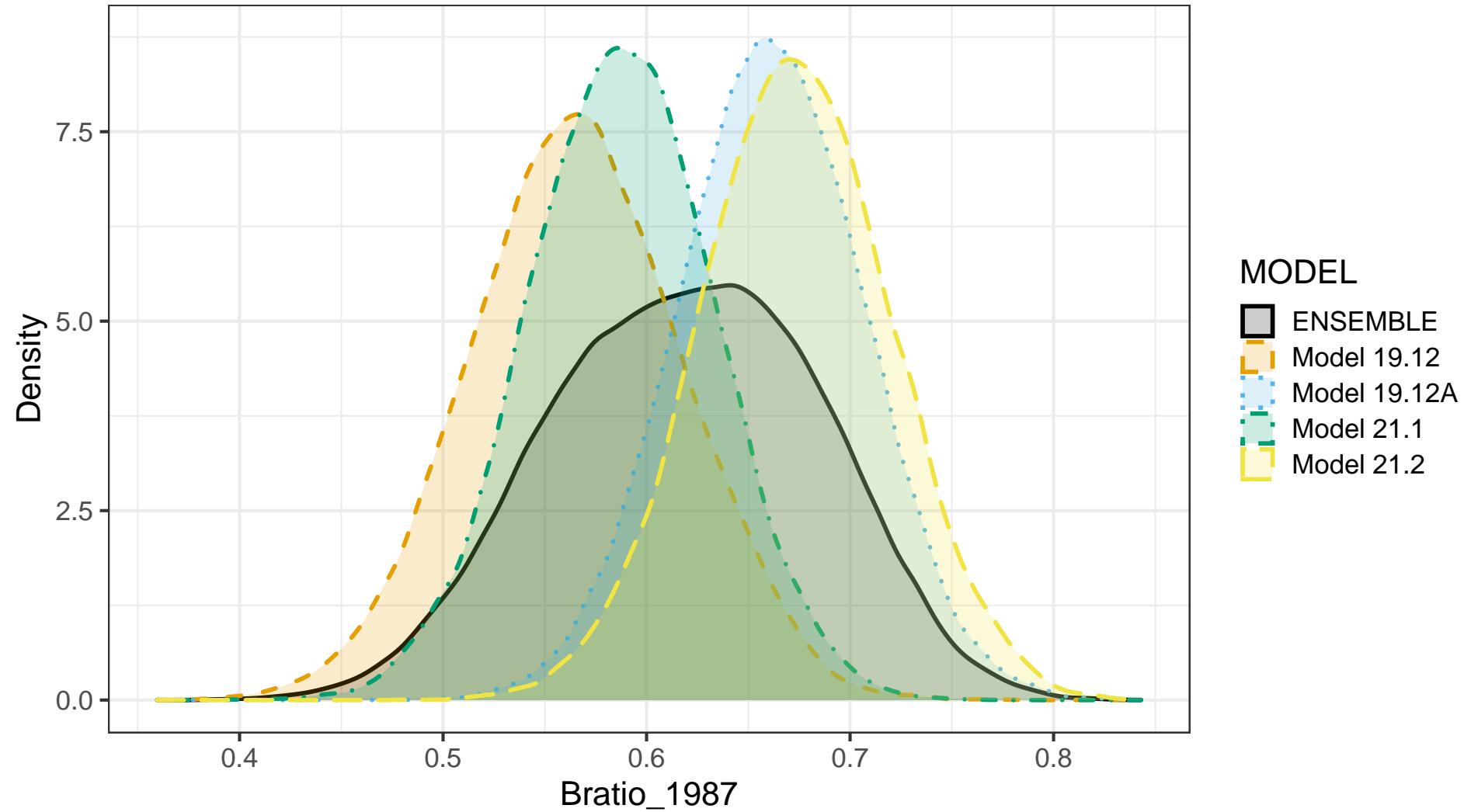
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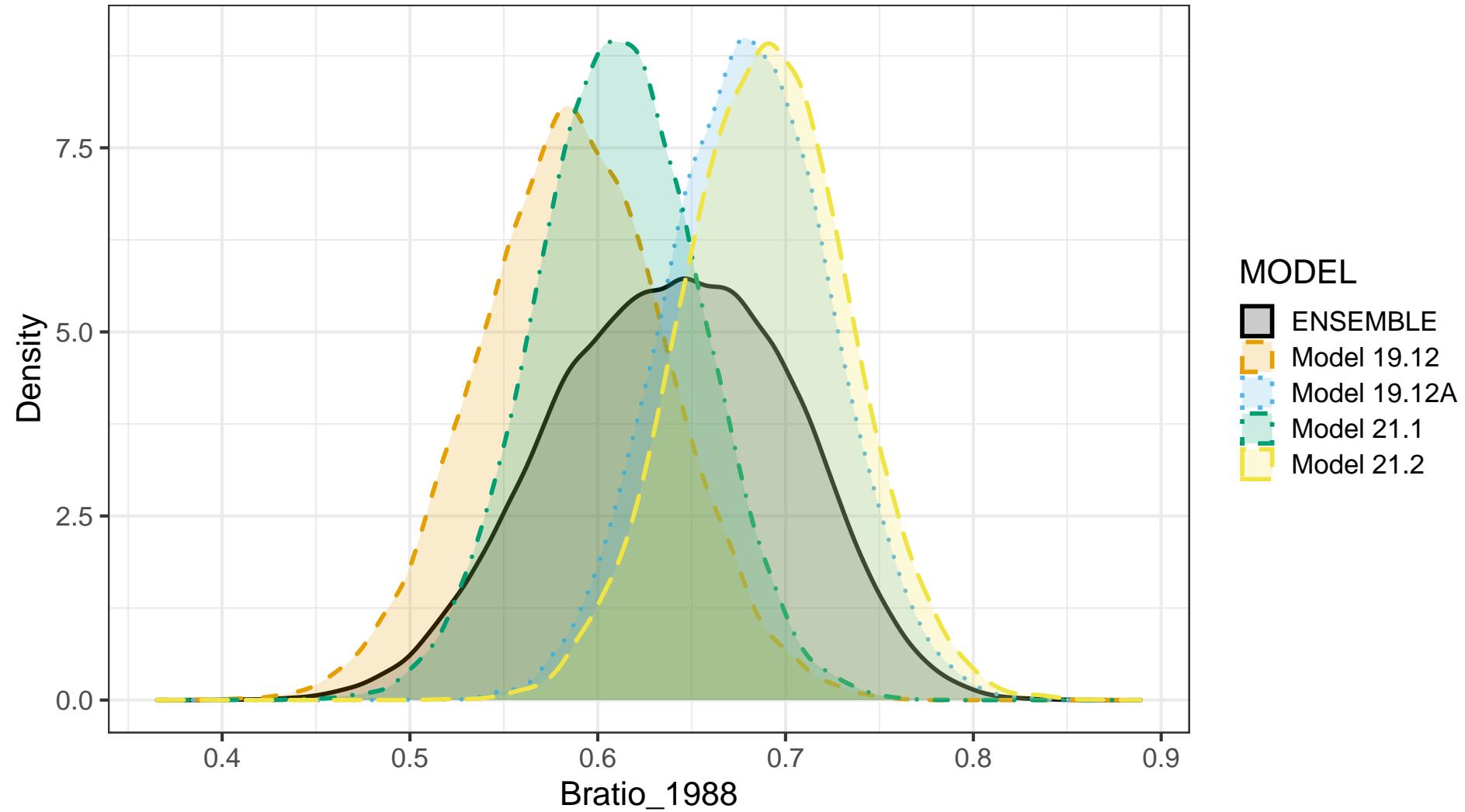
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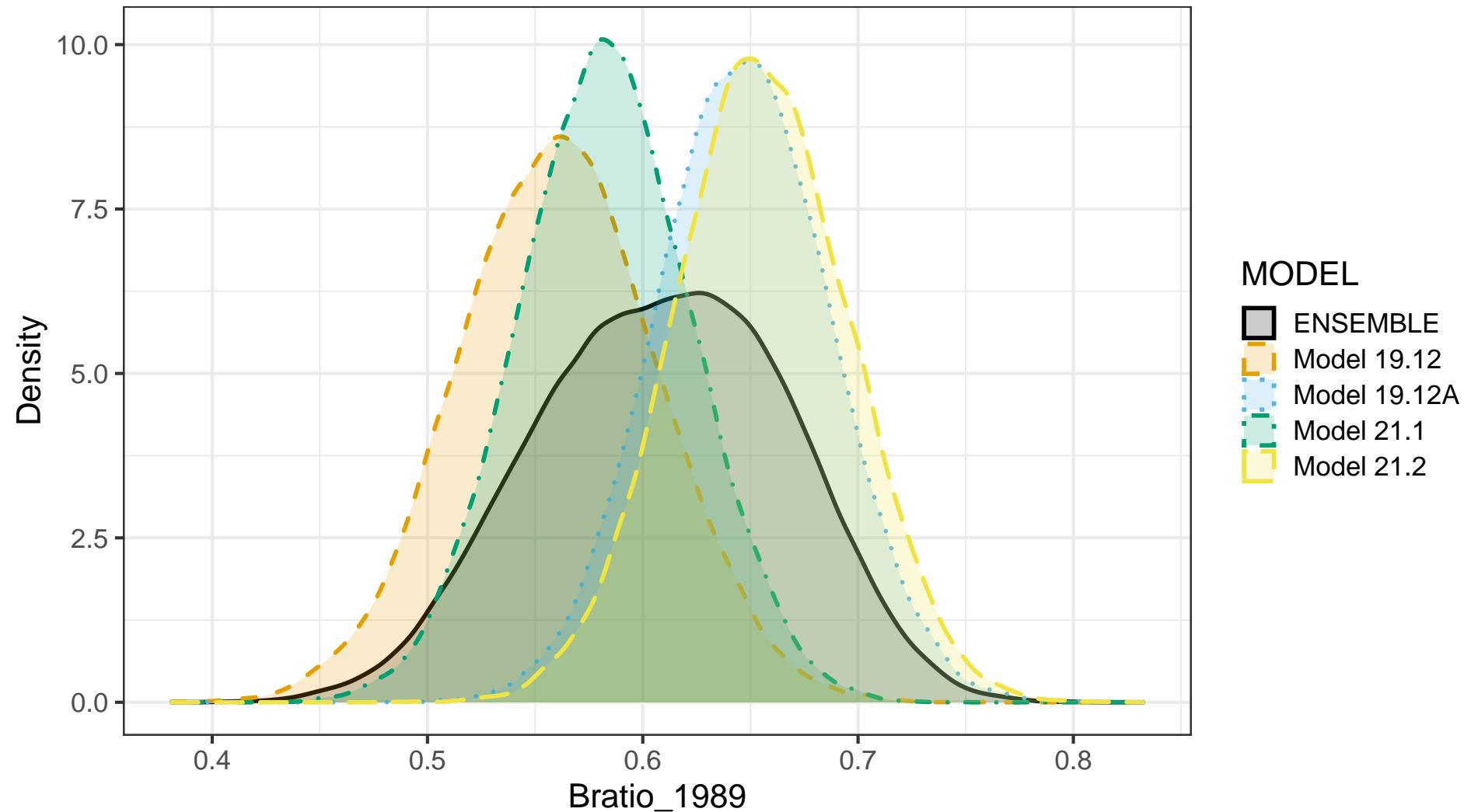
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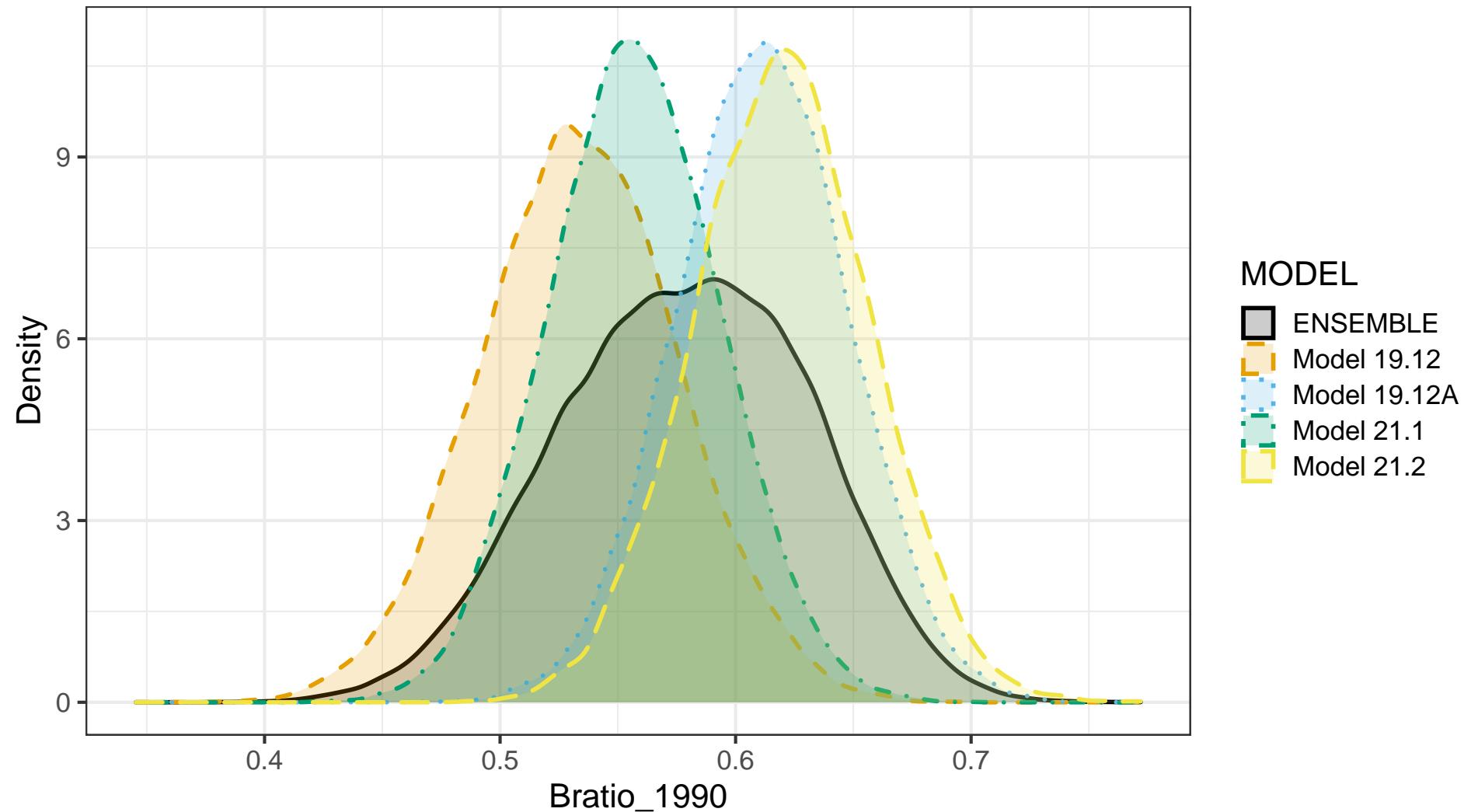
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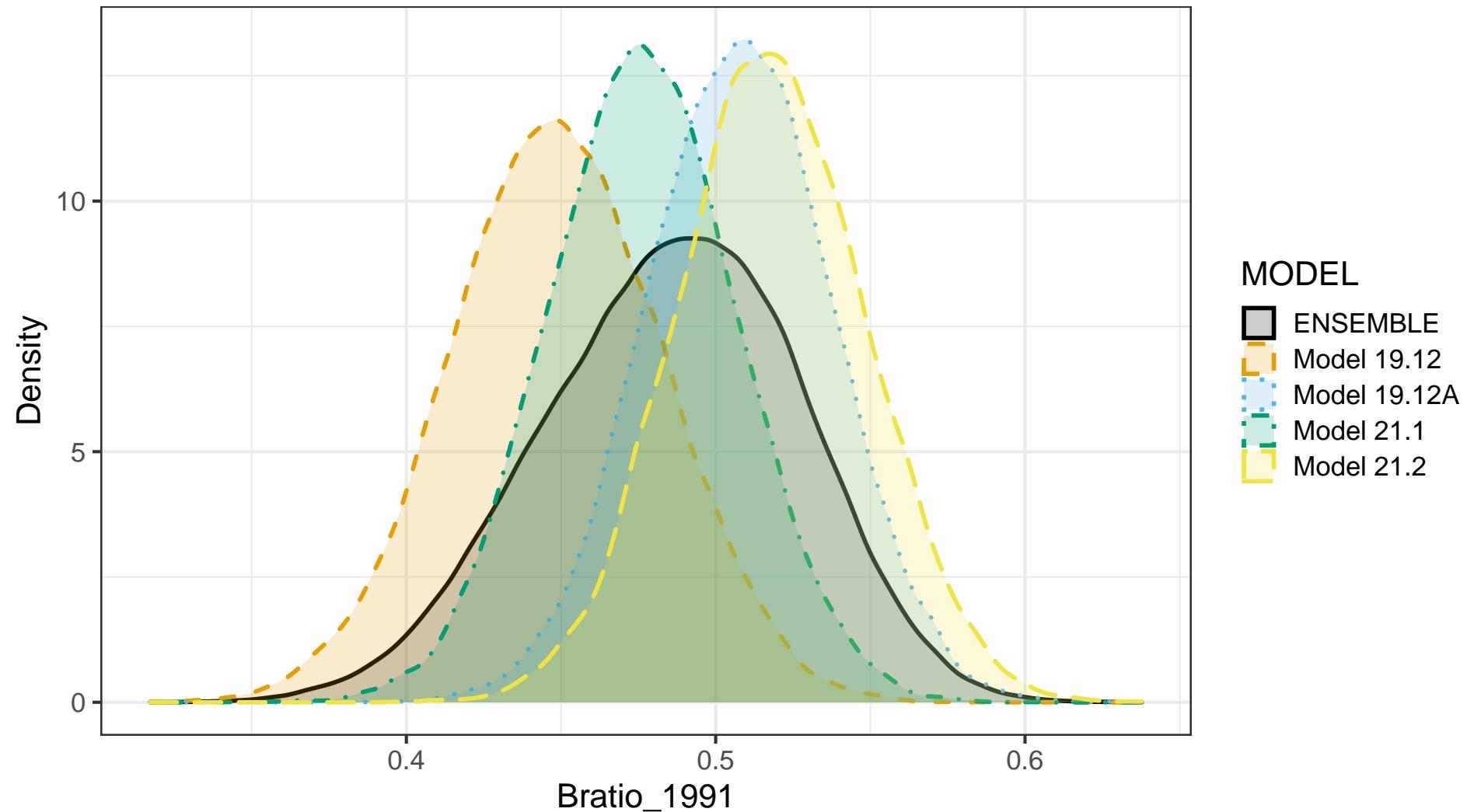
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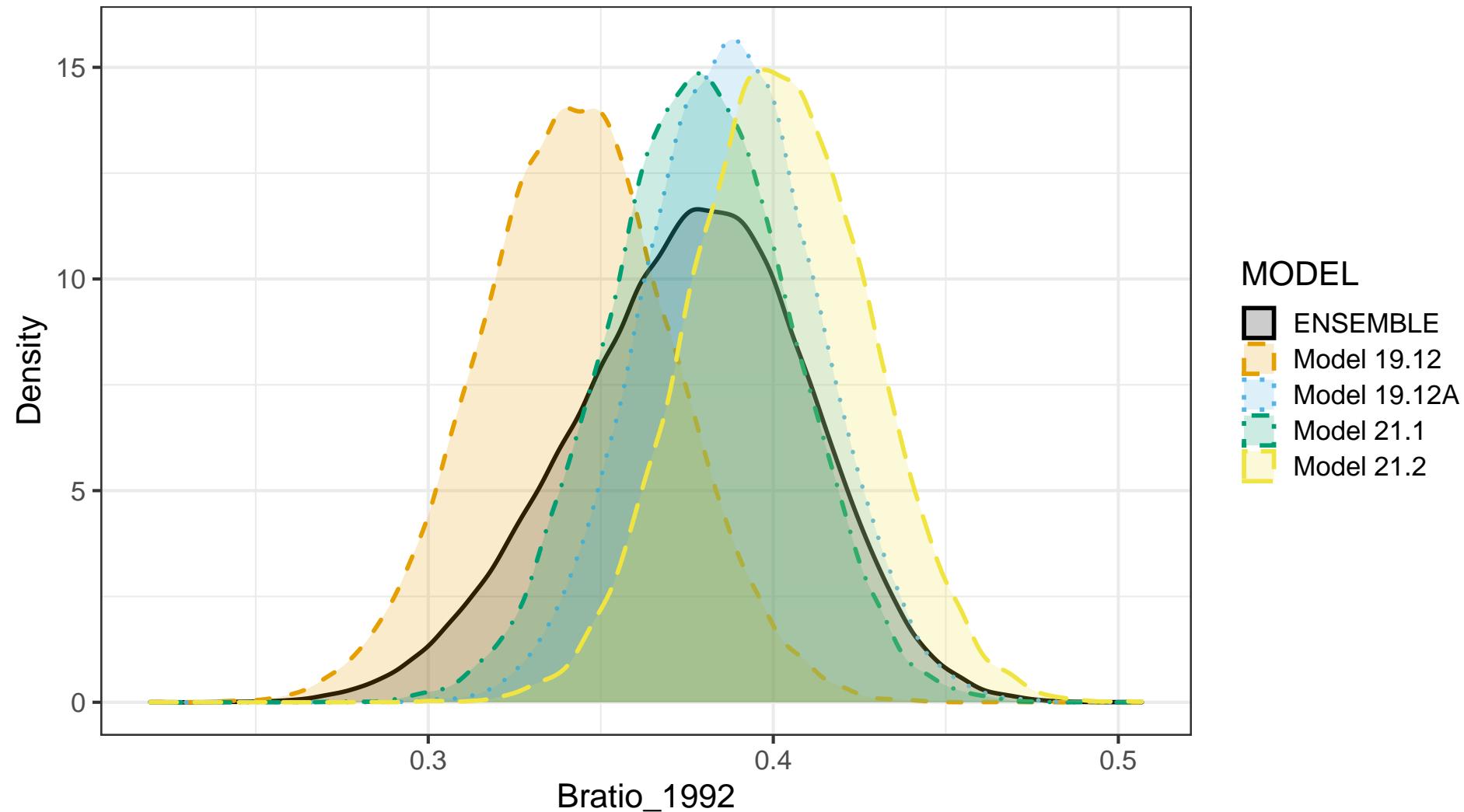
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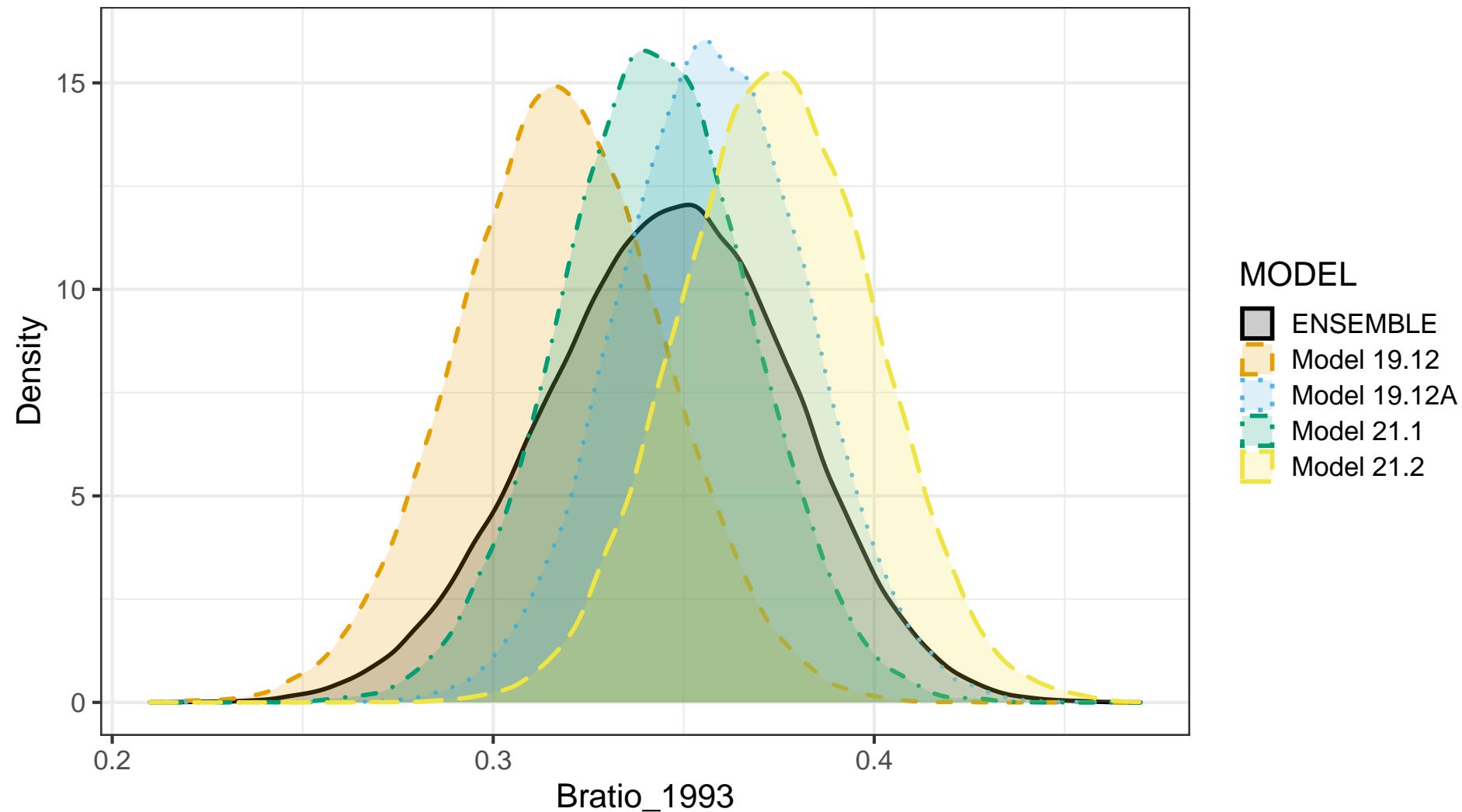
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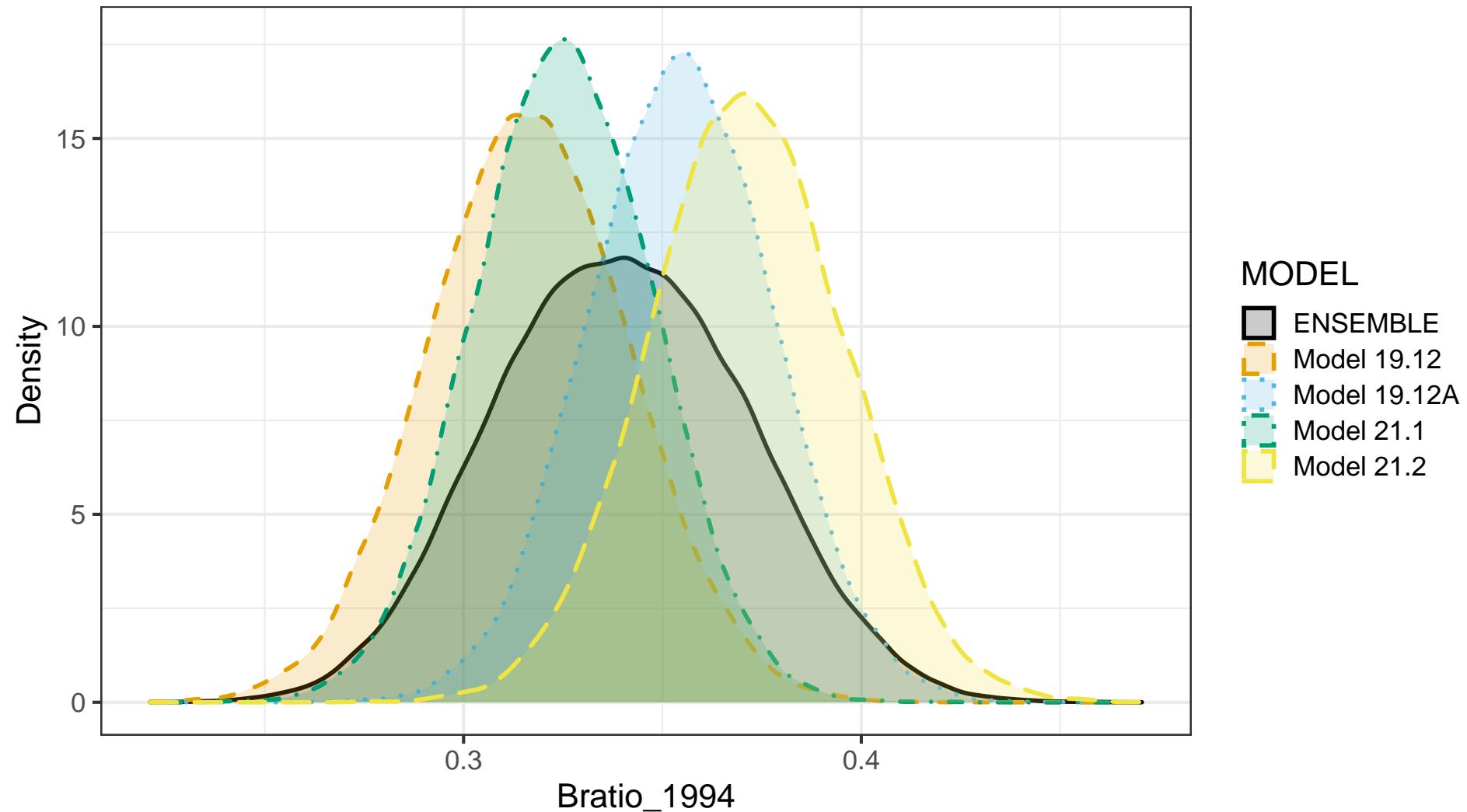
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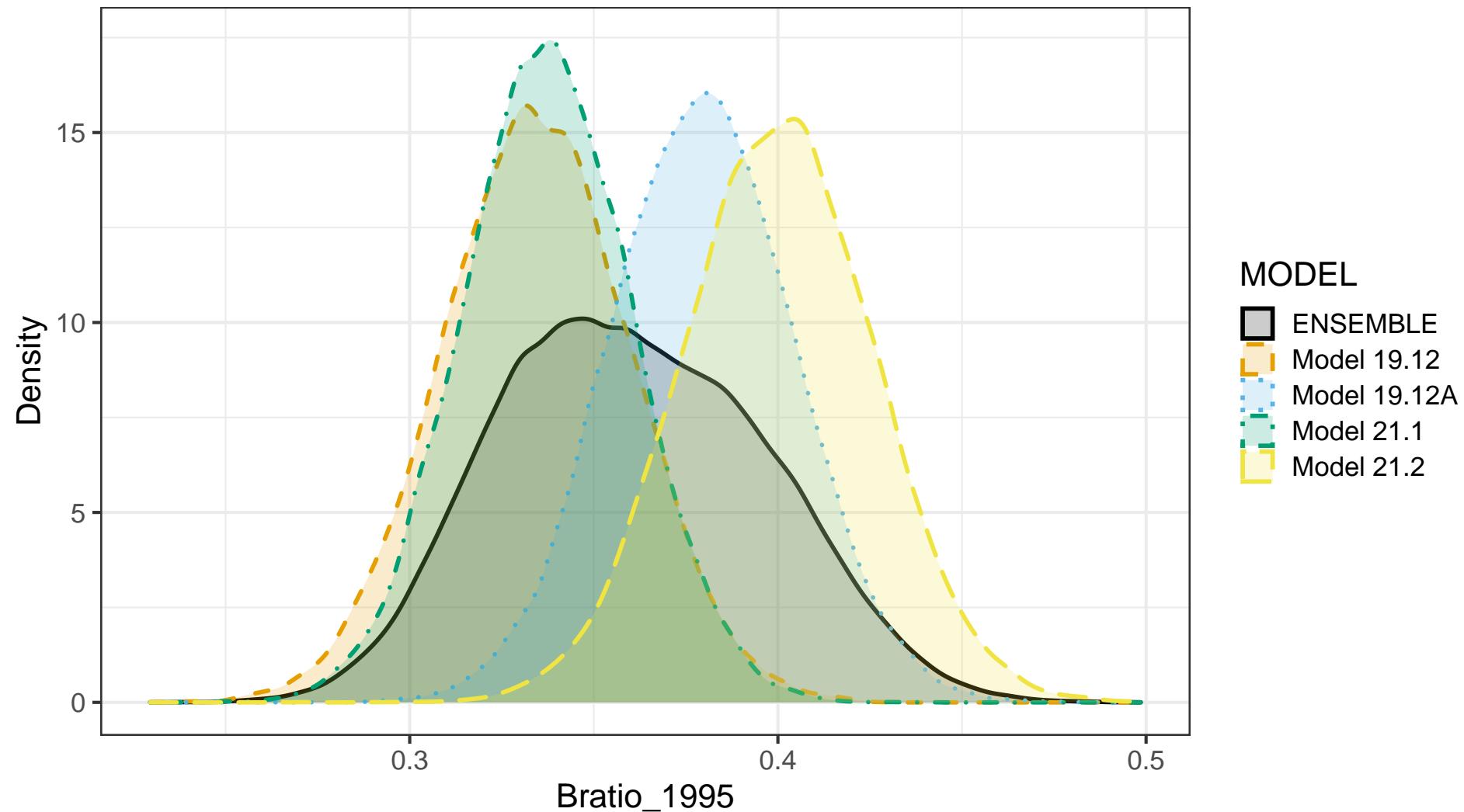
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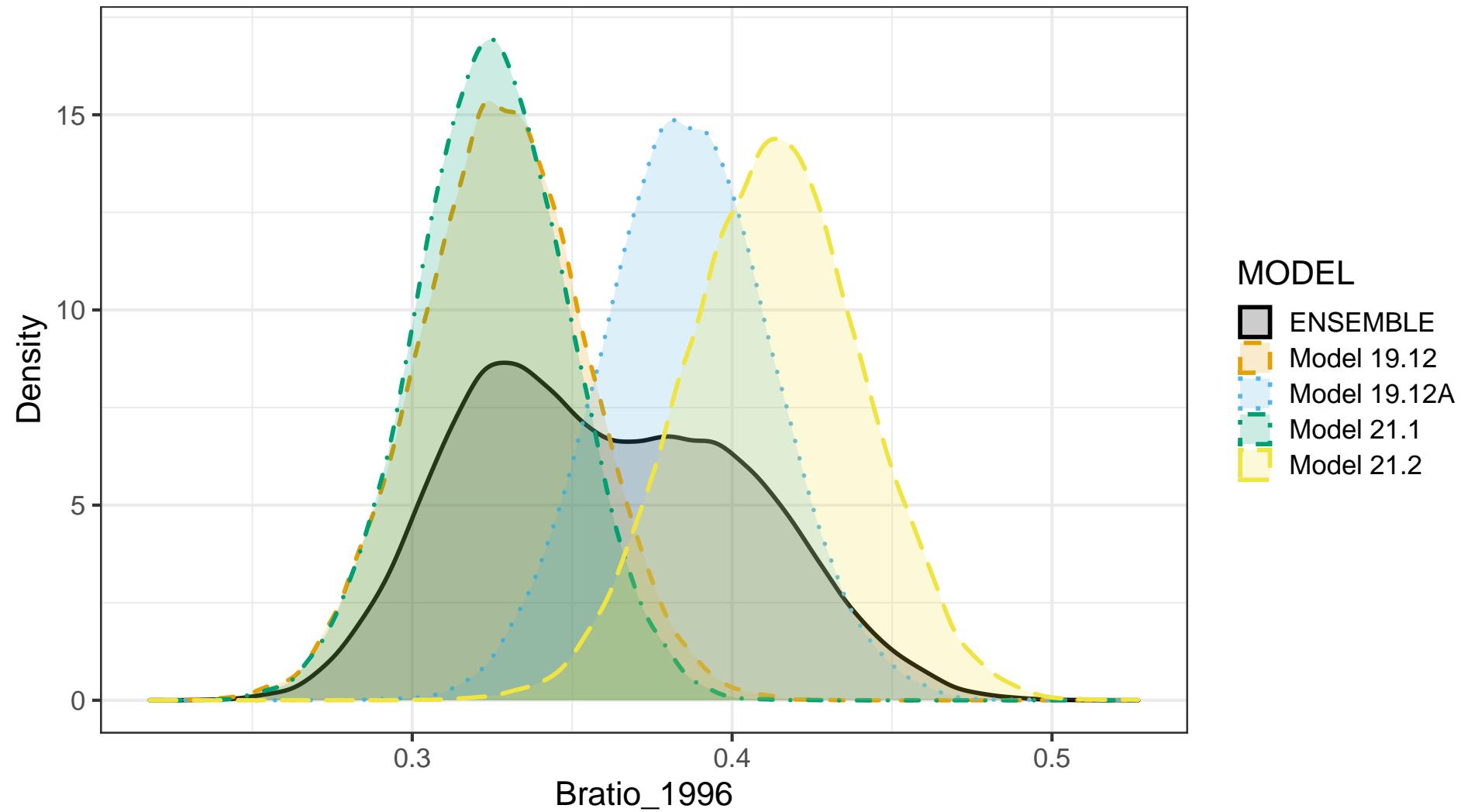
Bratio_1994



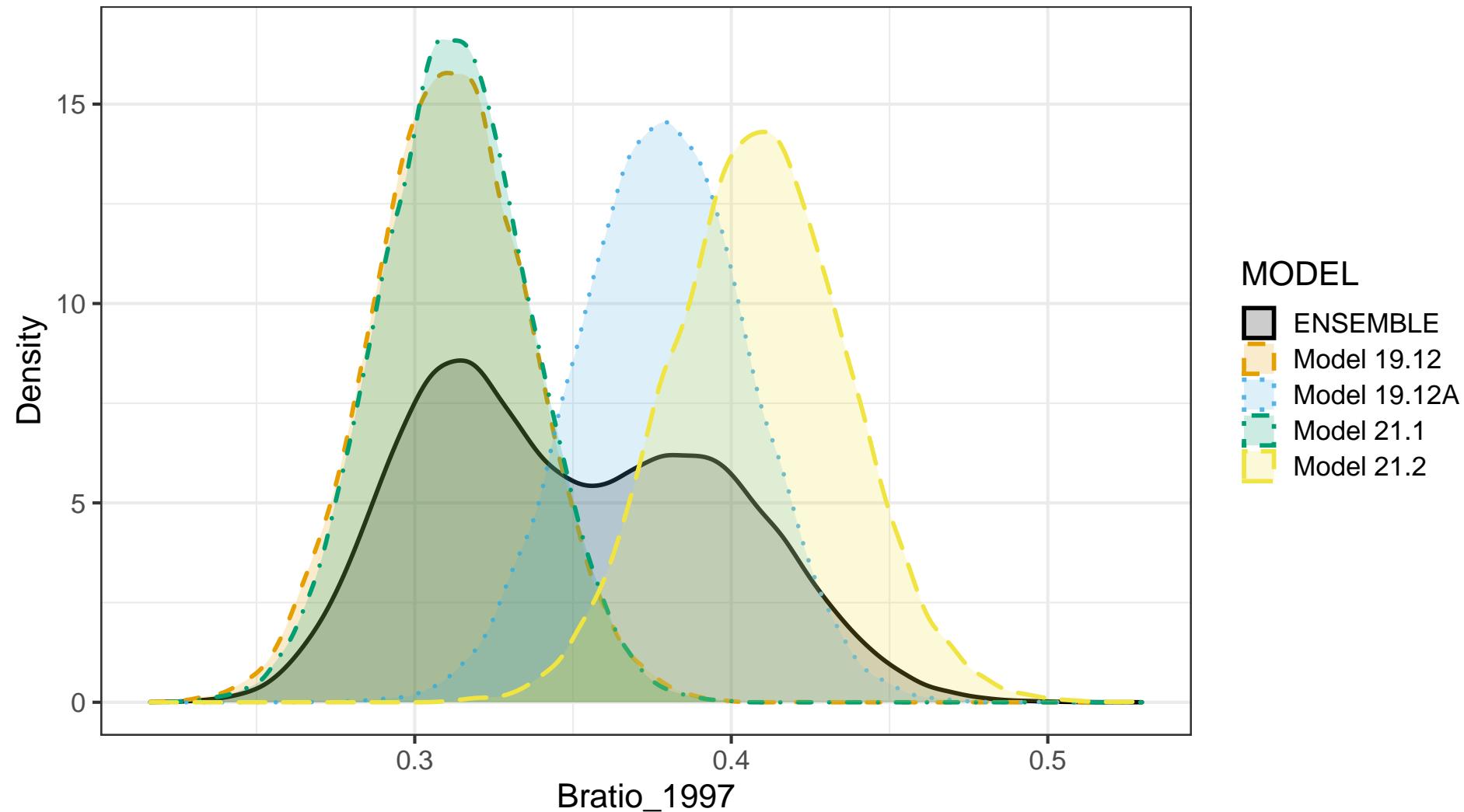
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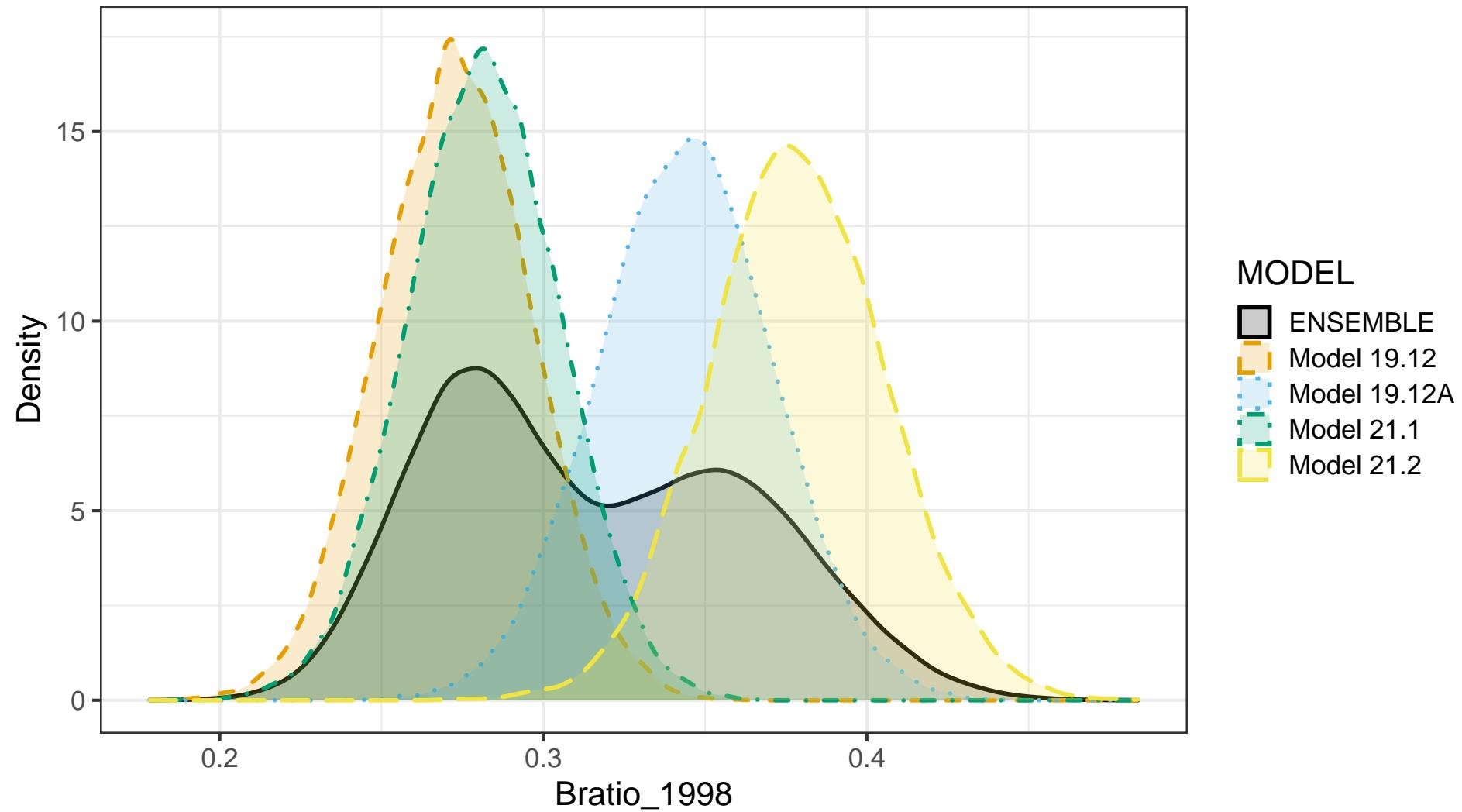
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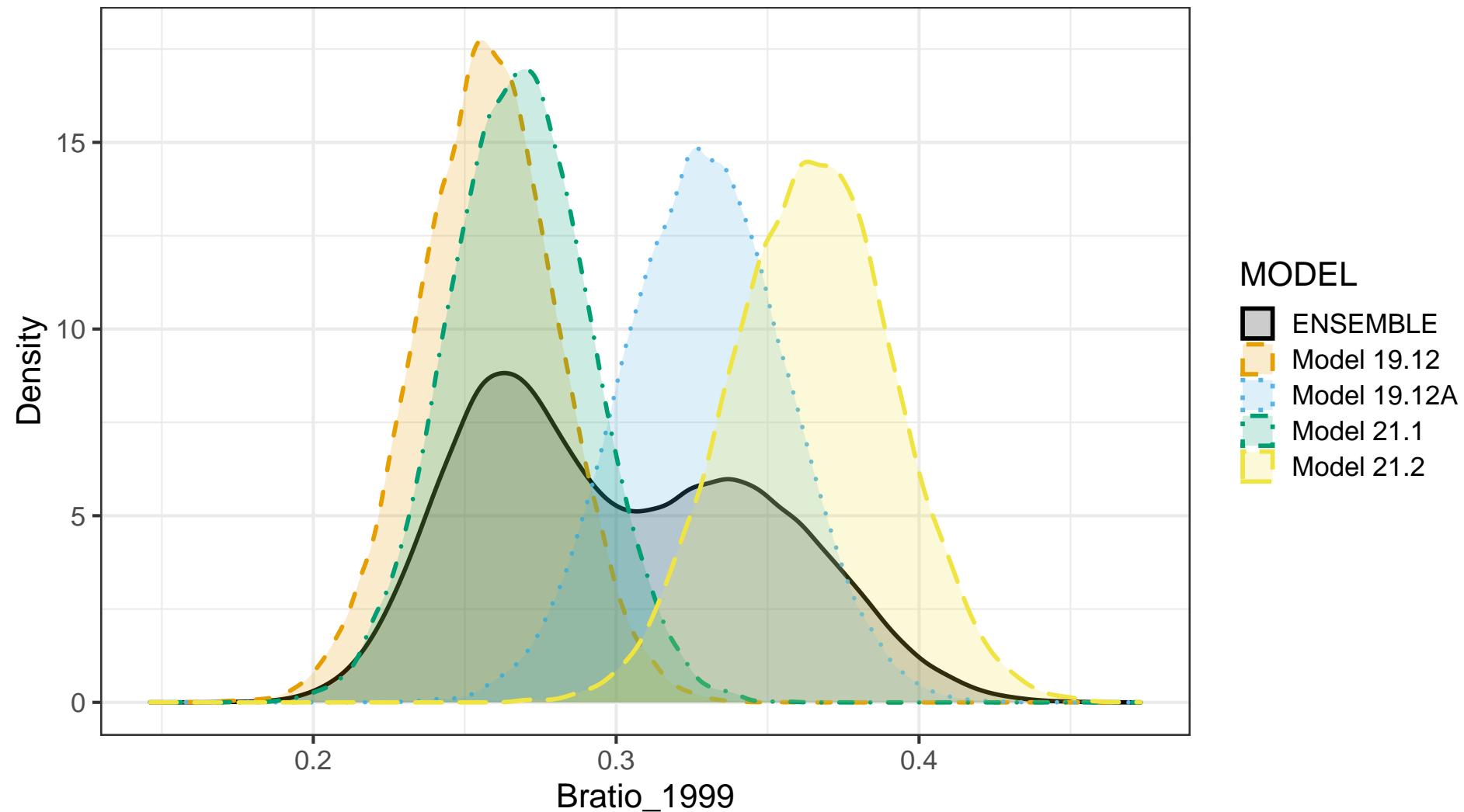
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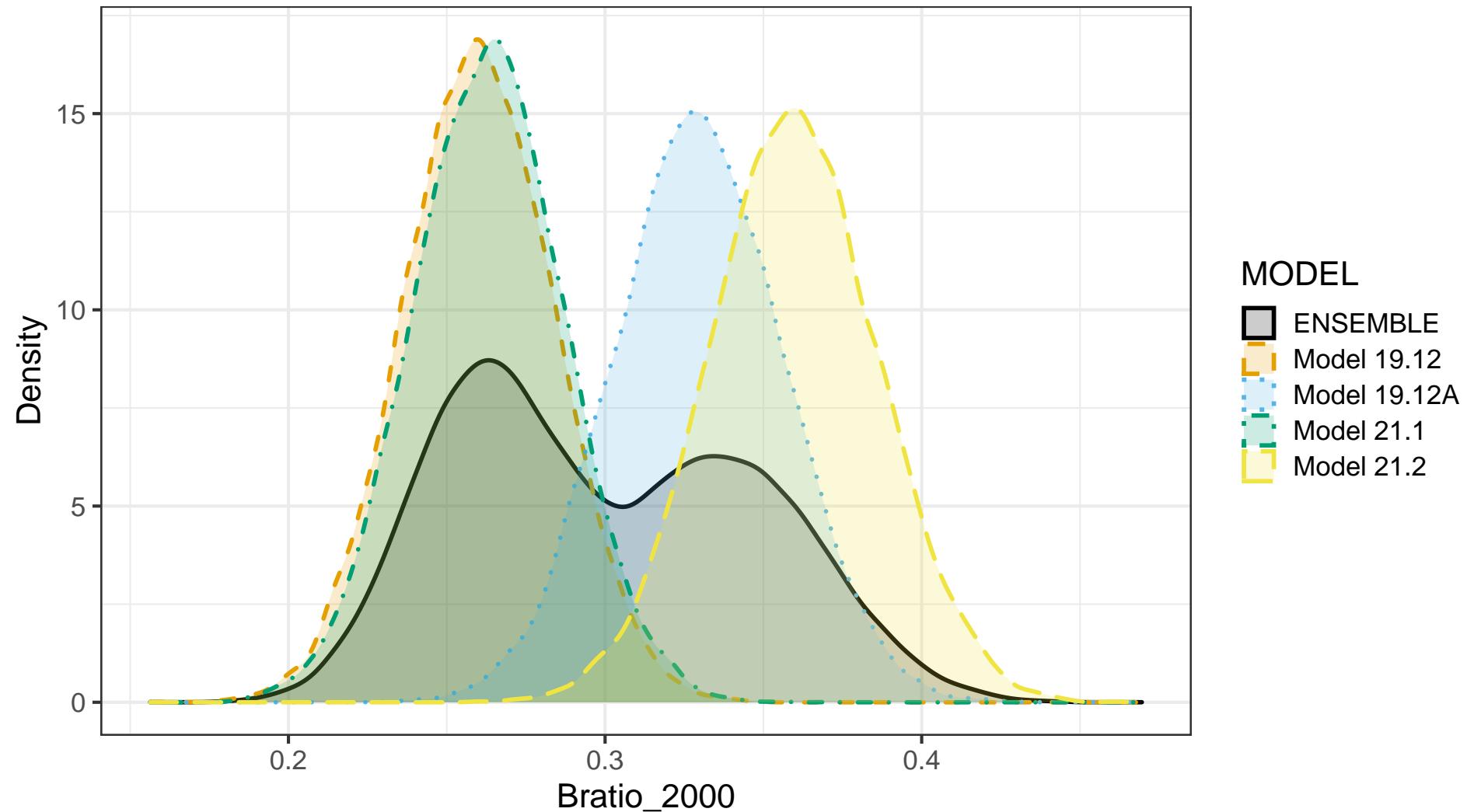
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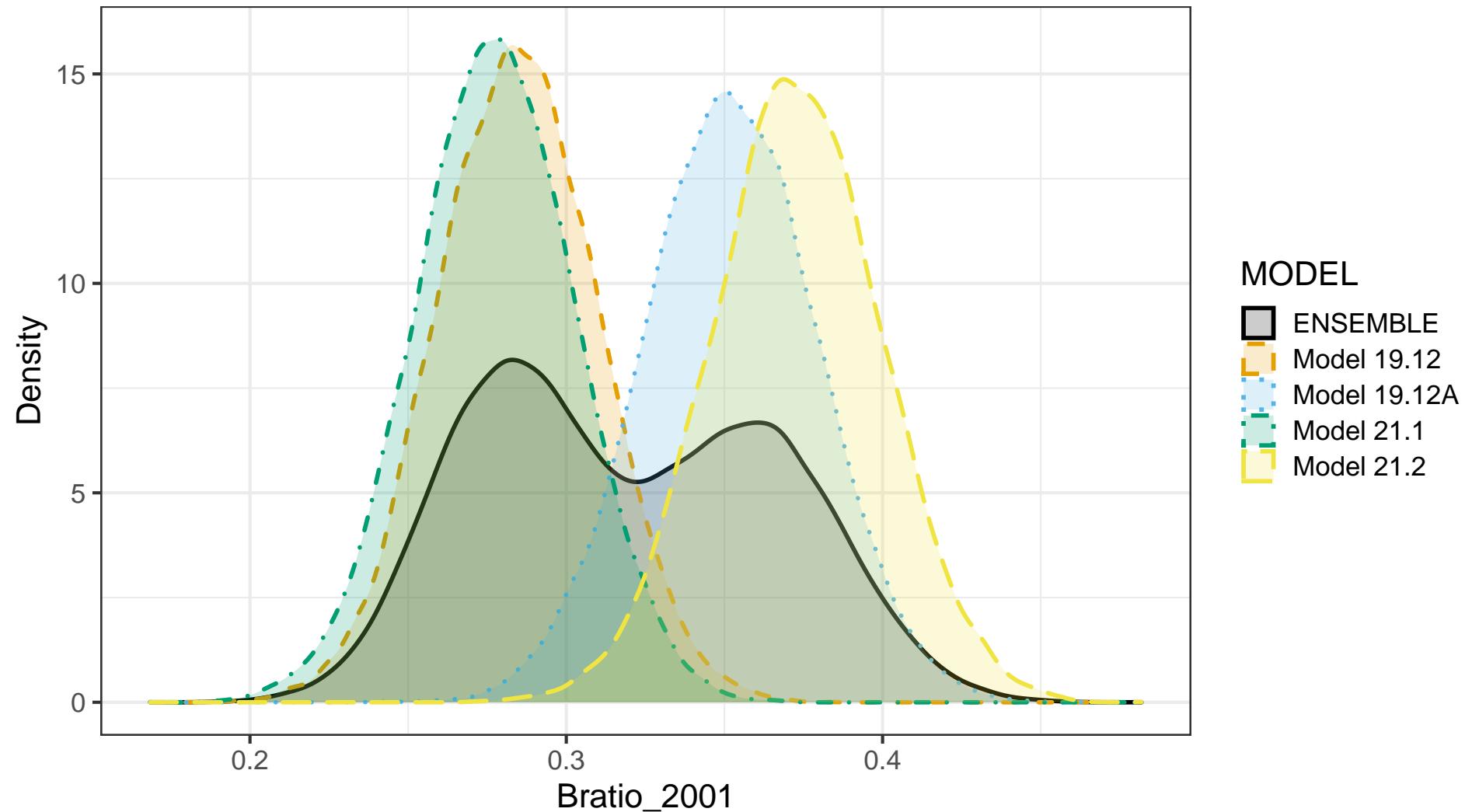
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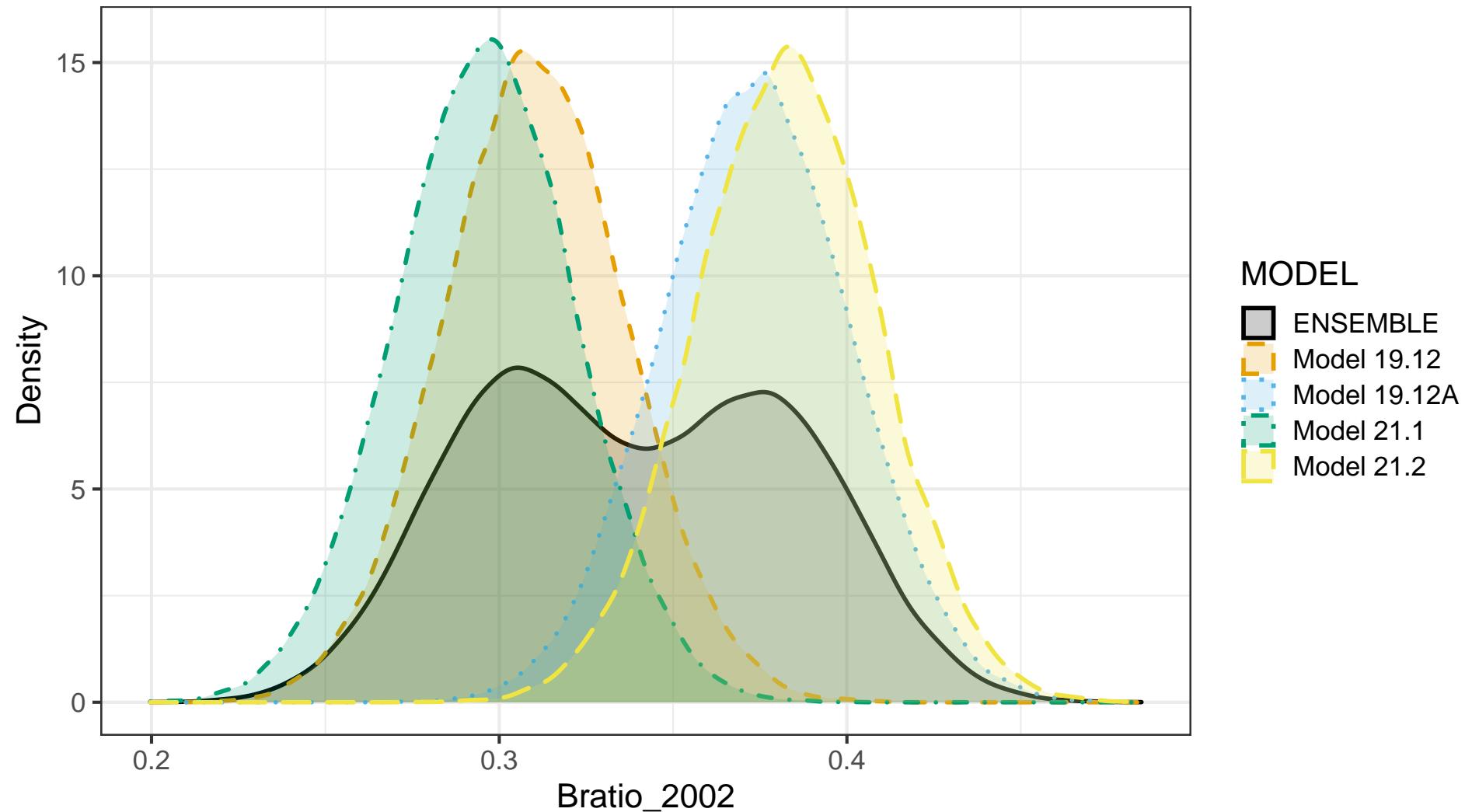
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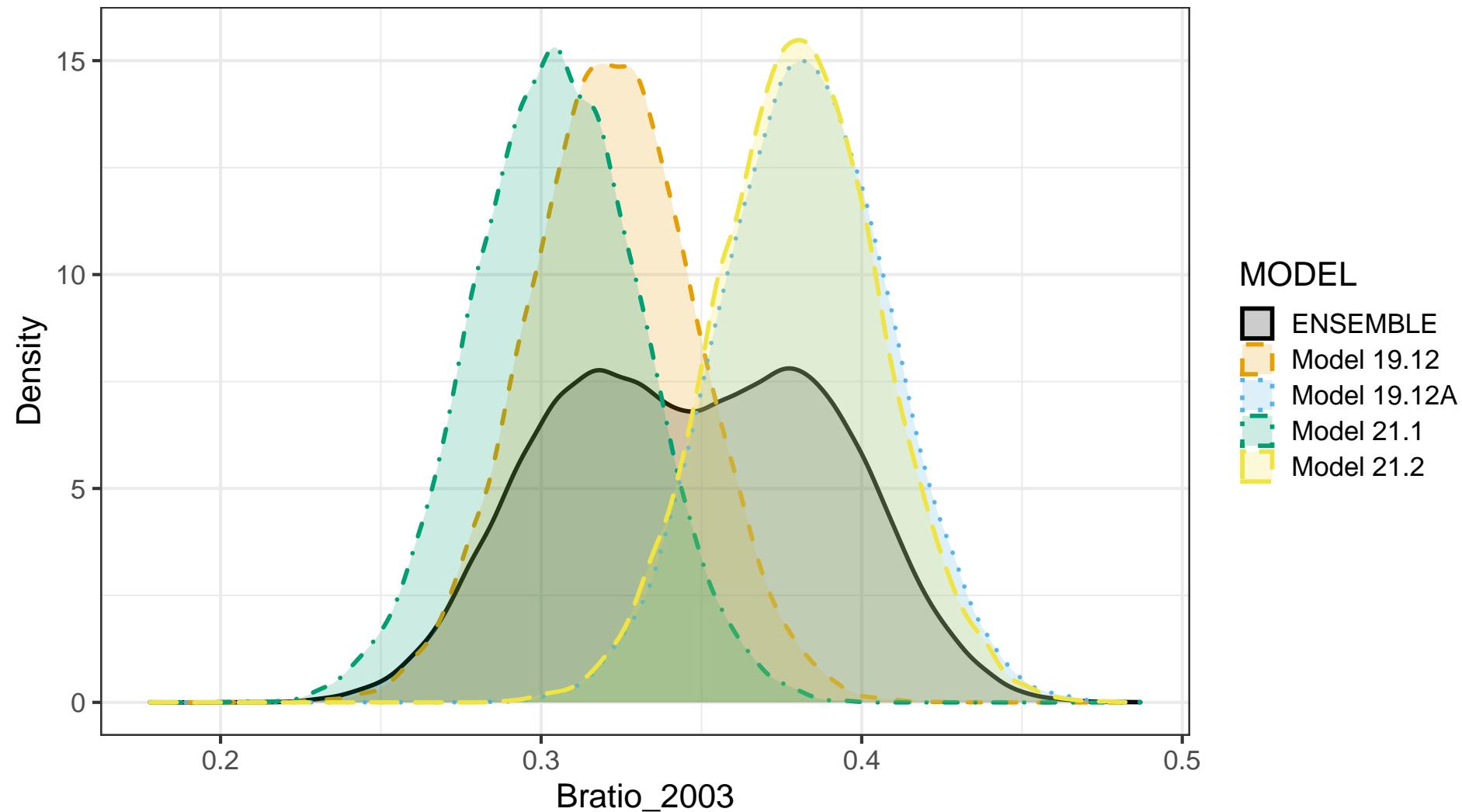
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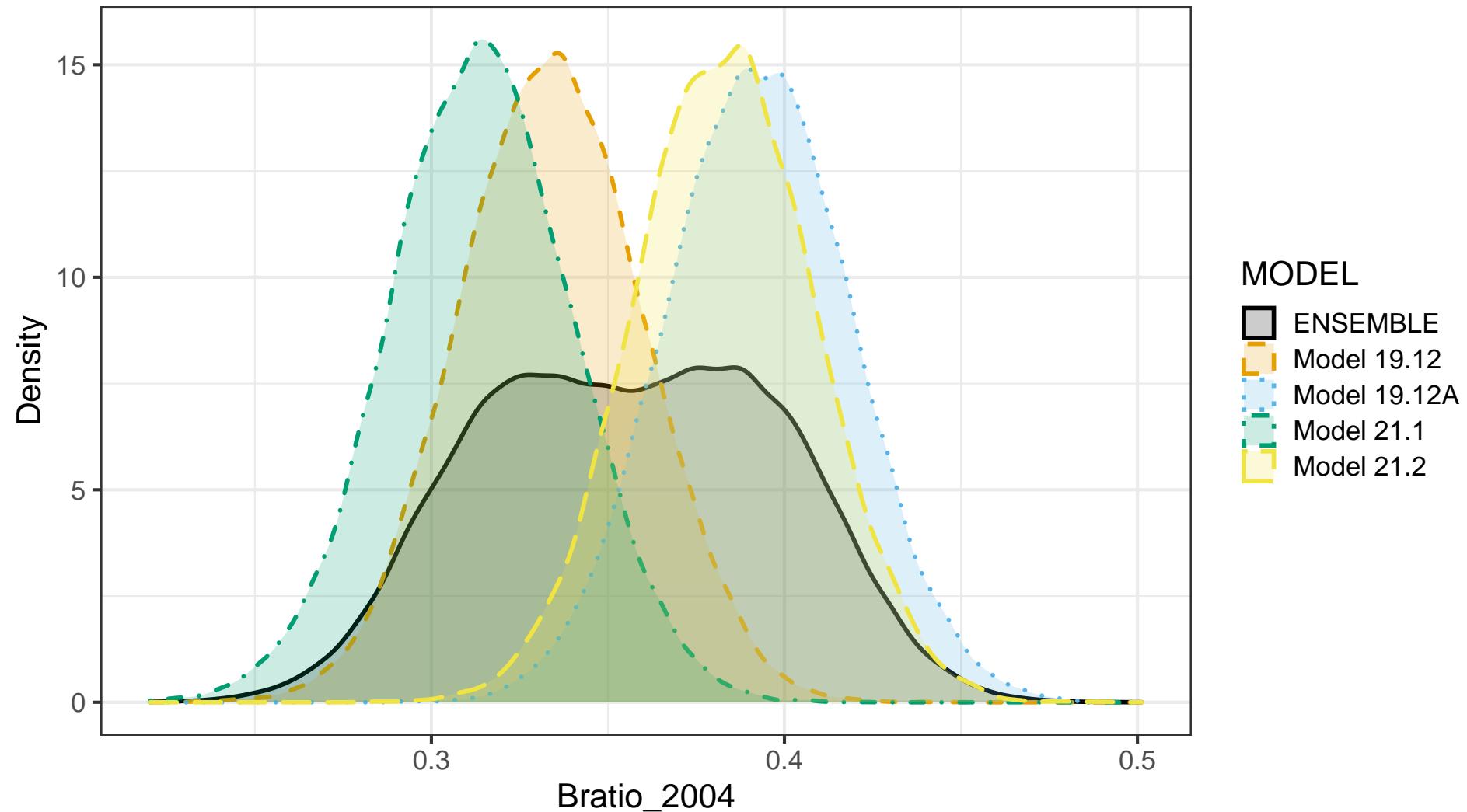
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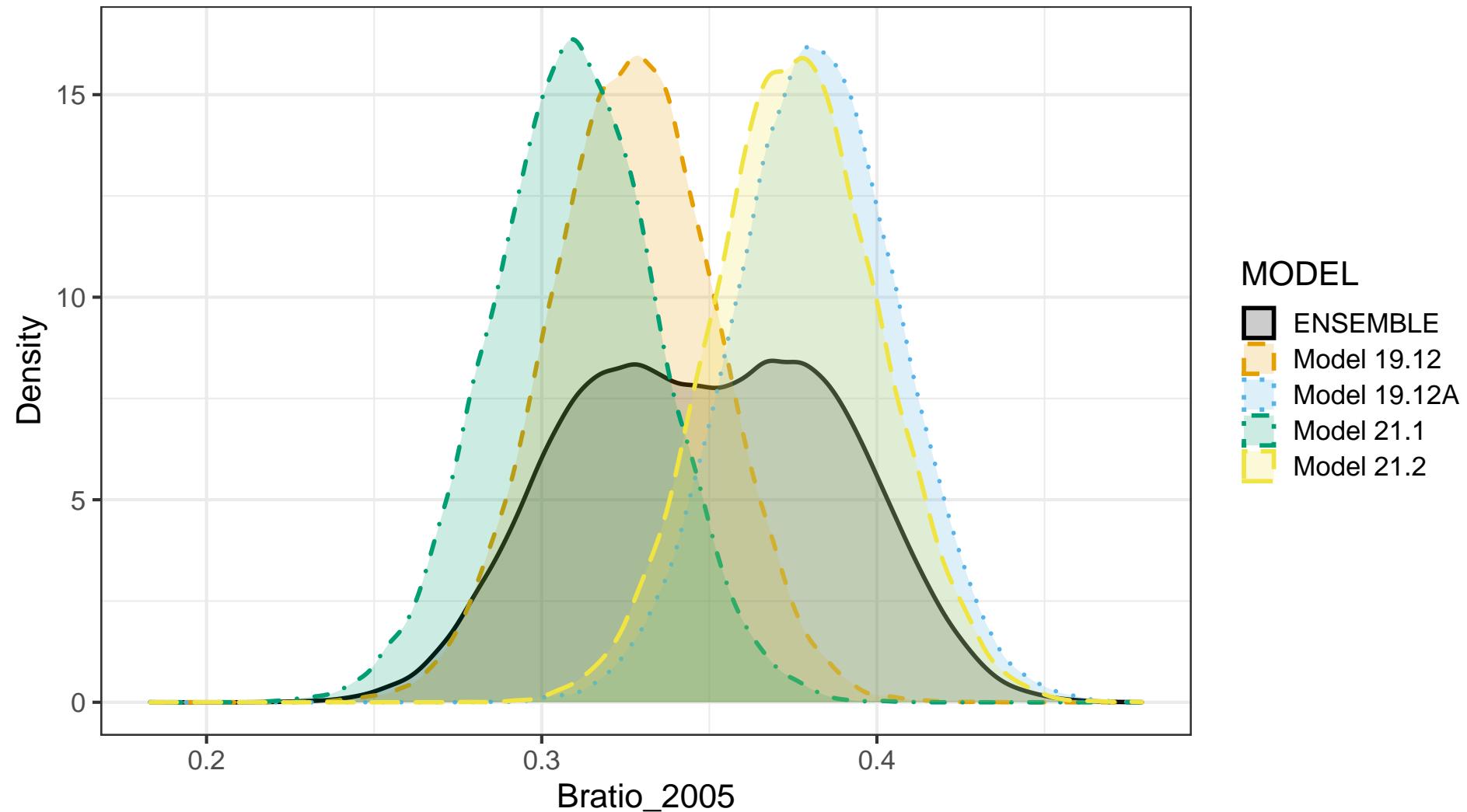
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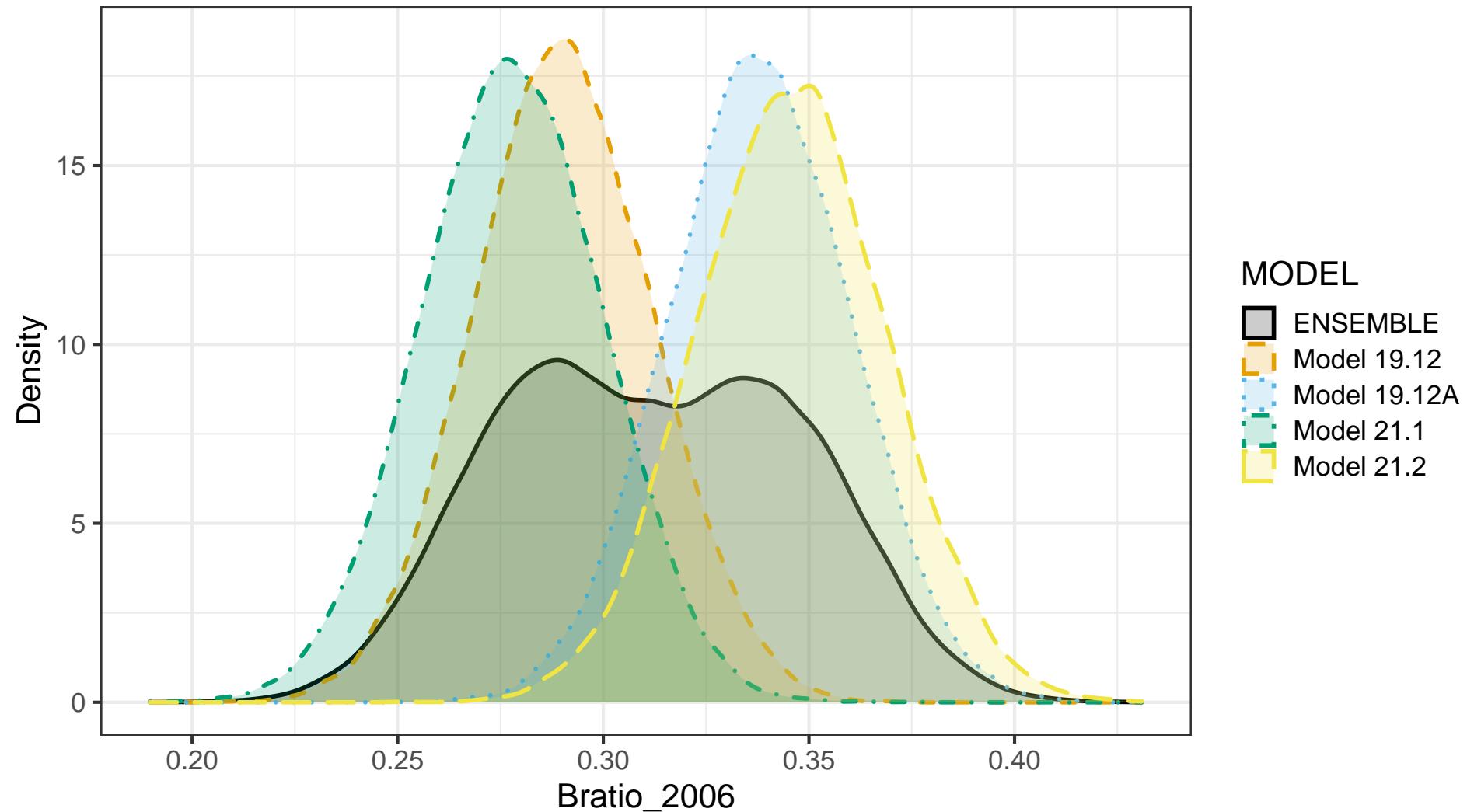
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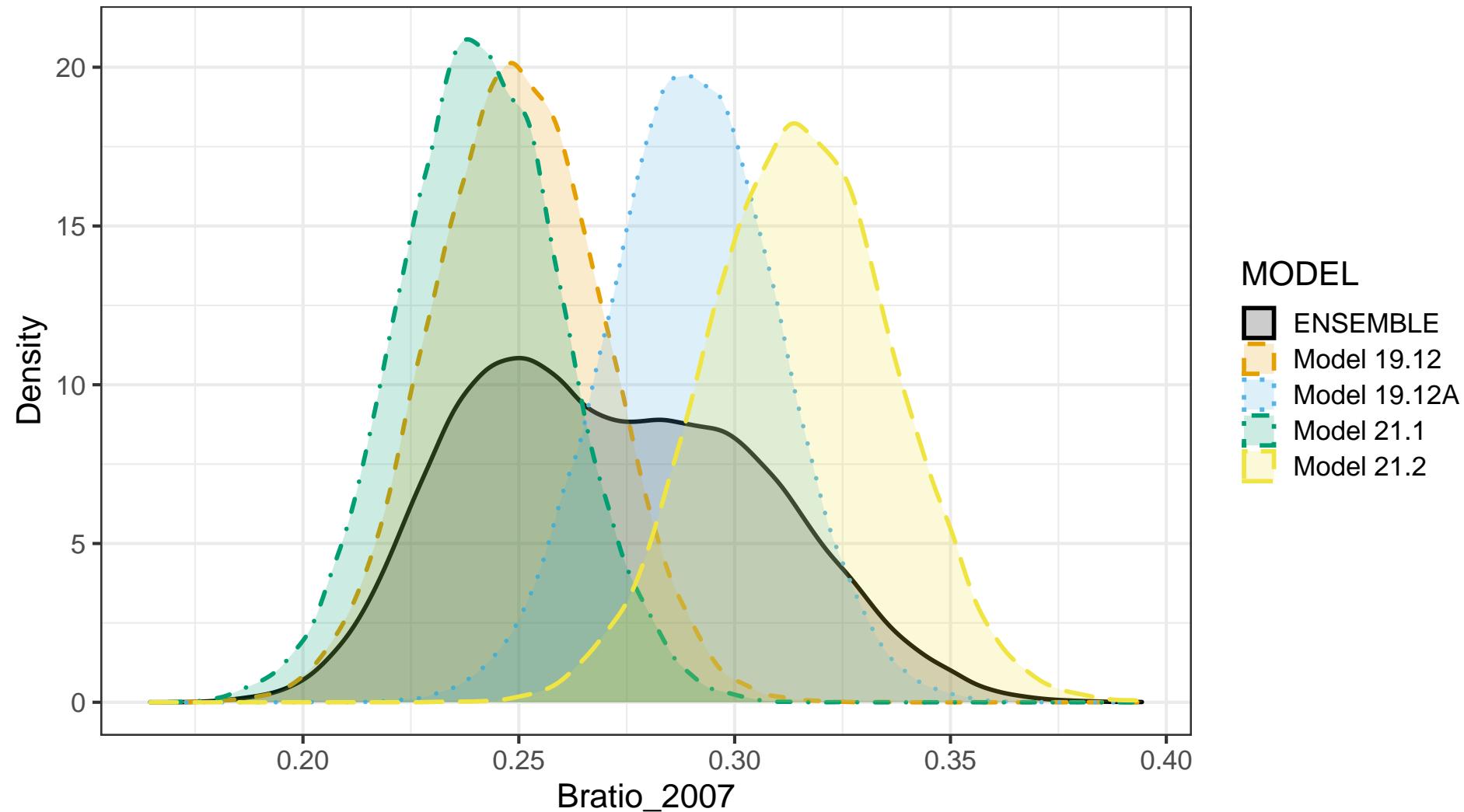
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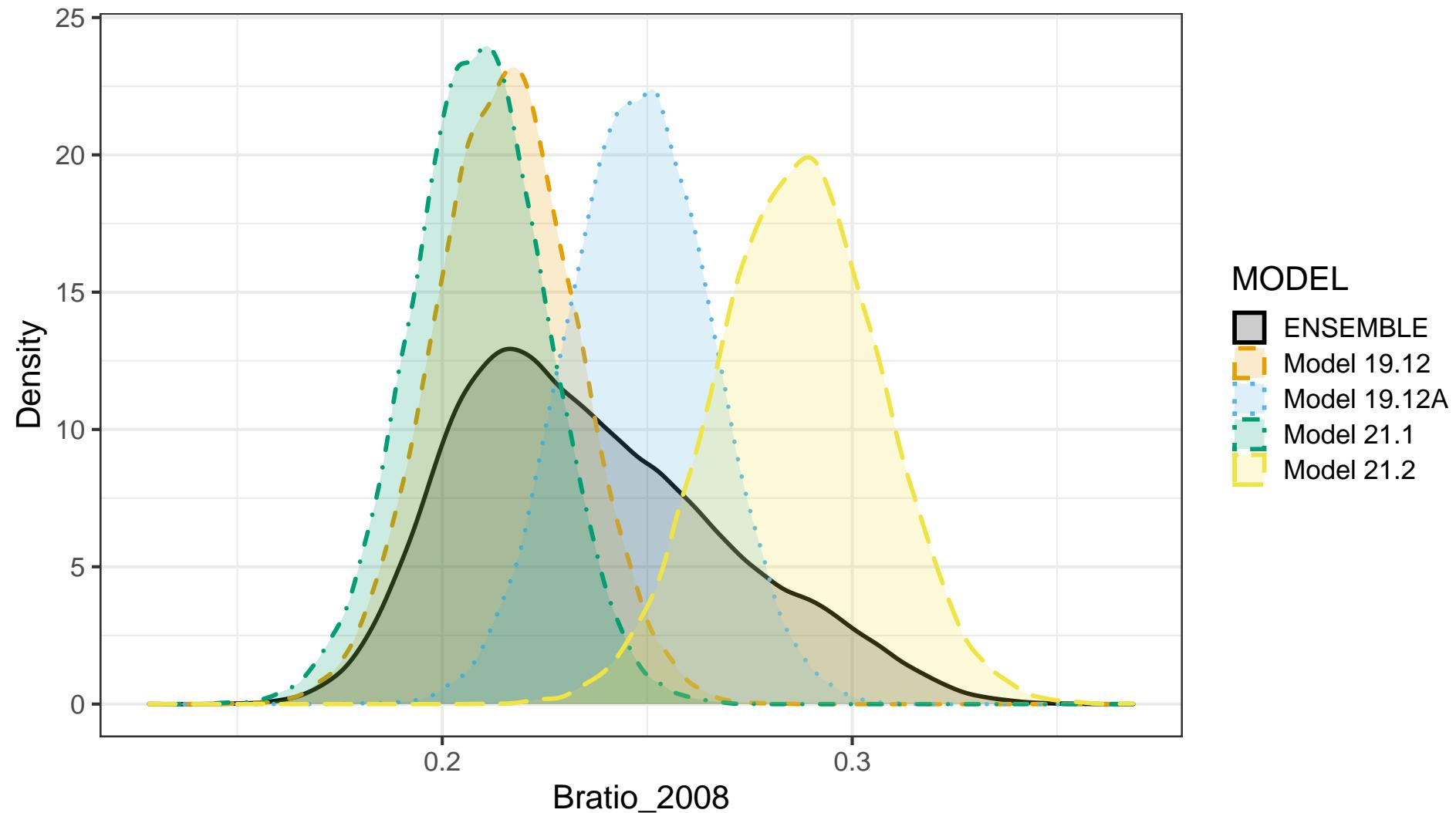
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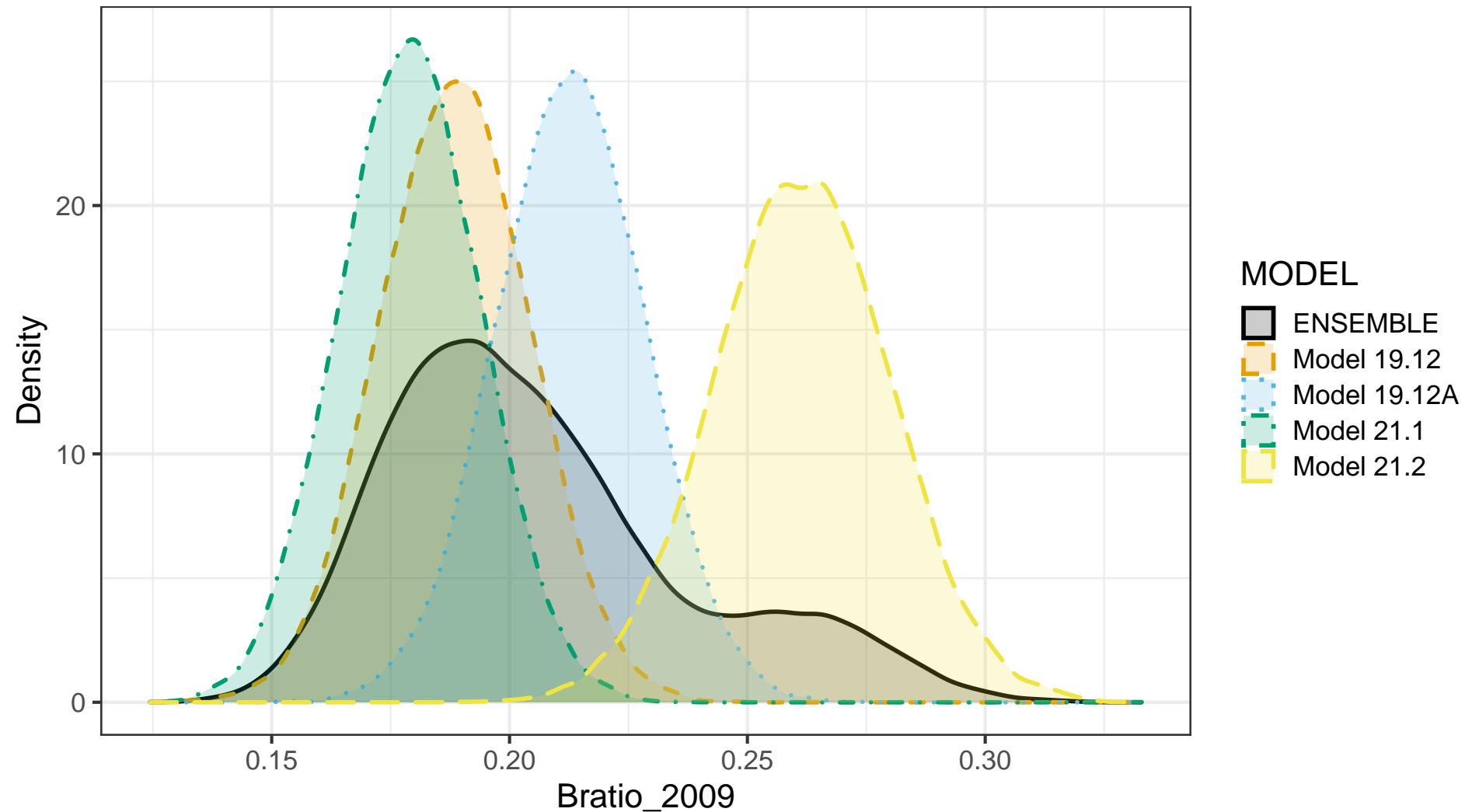
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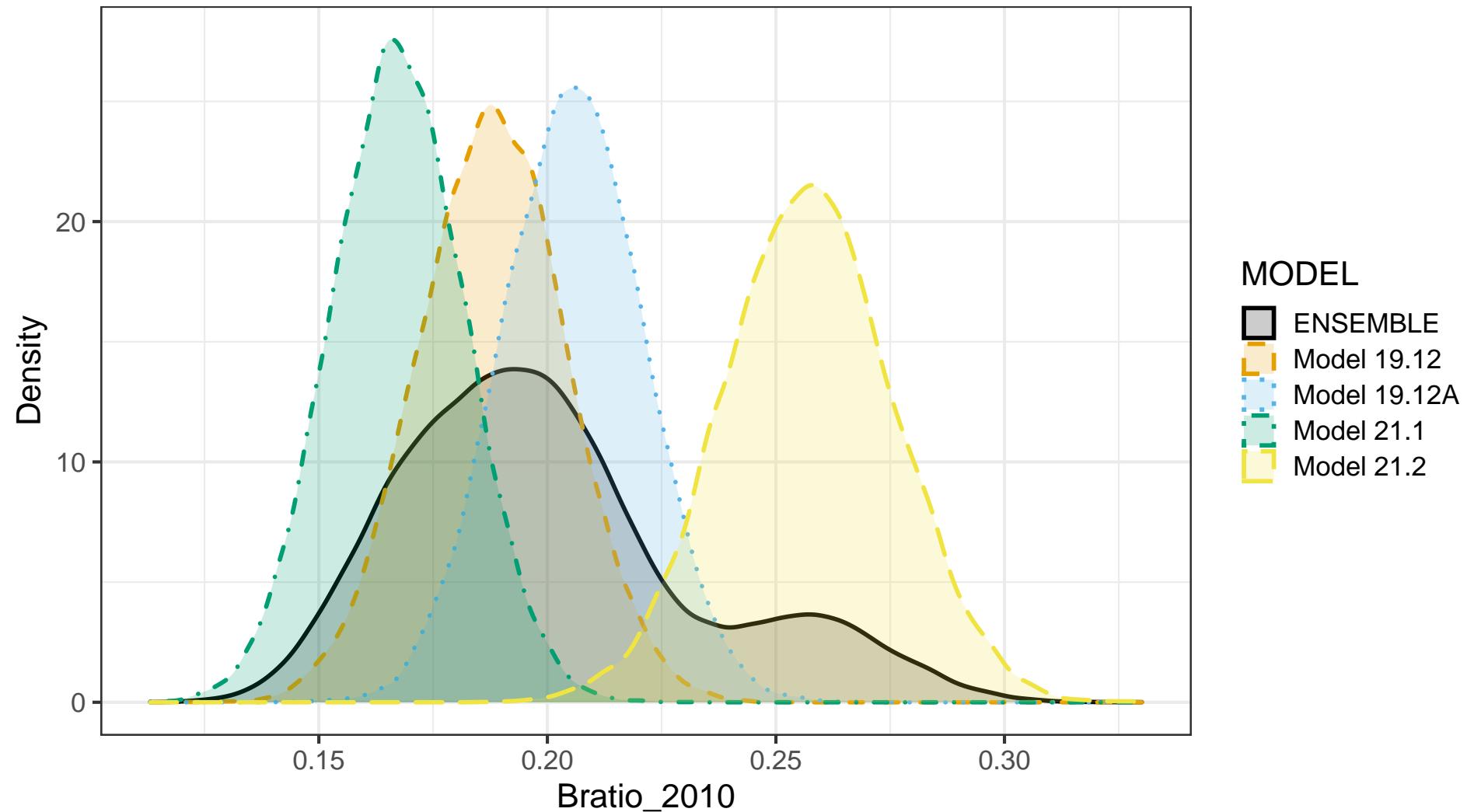
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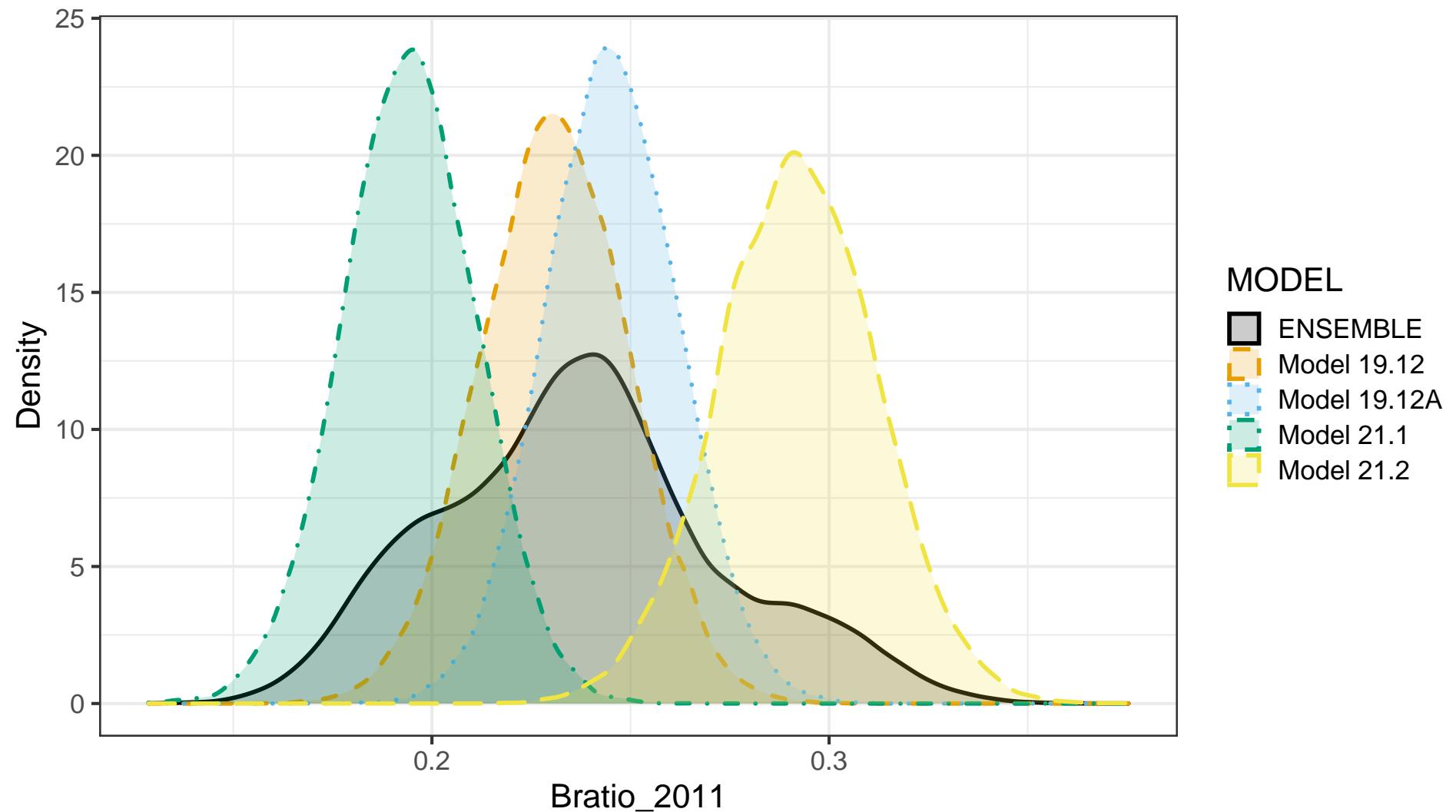
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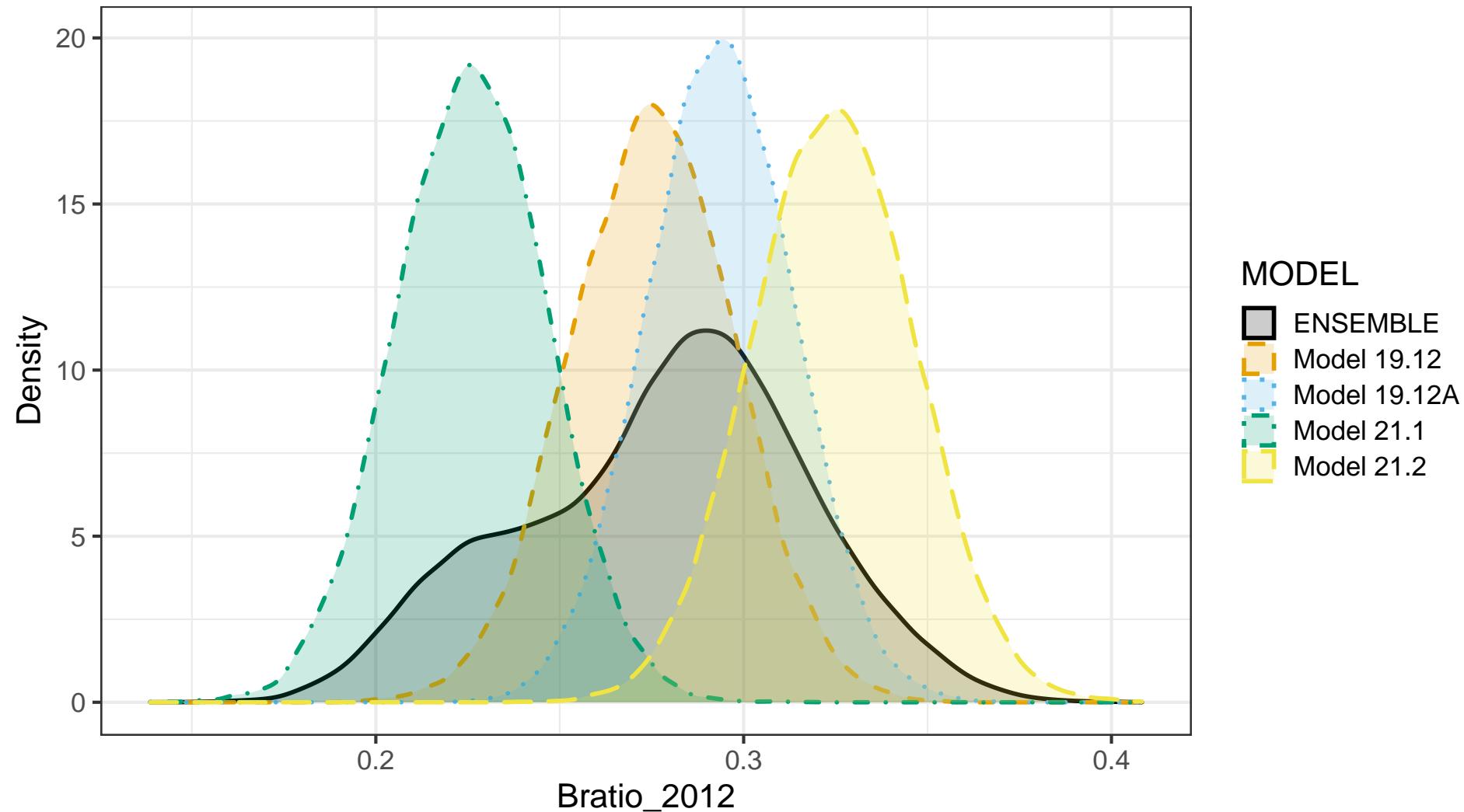
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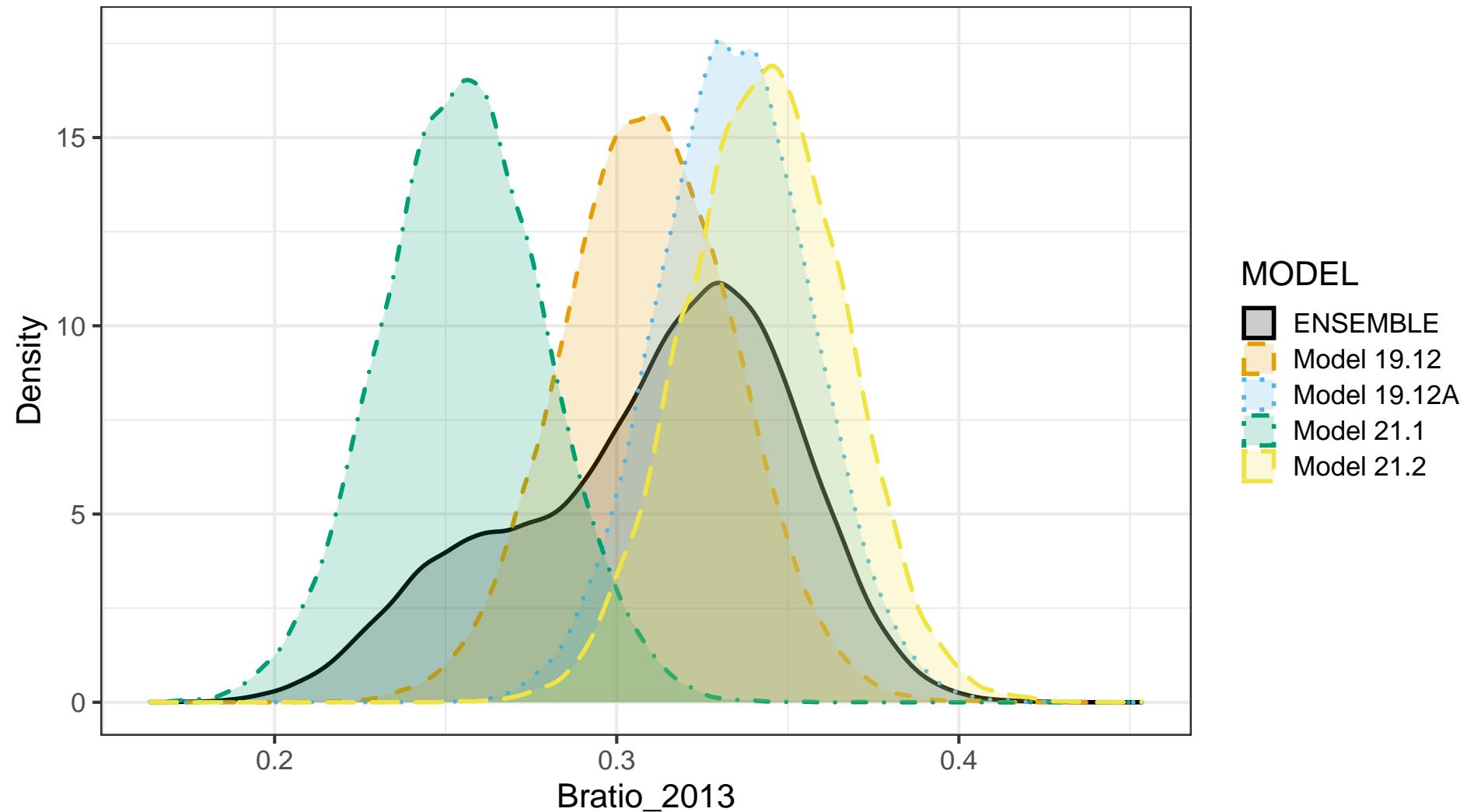
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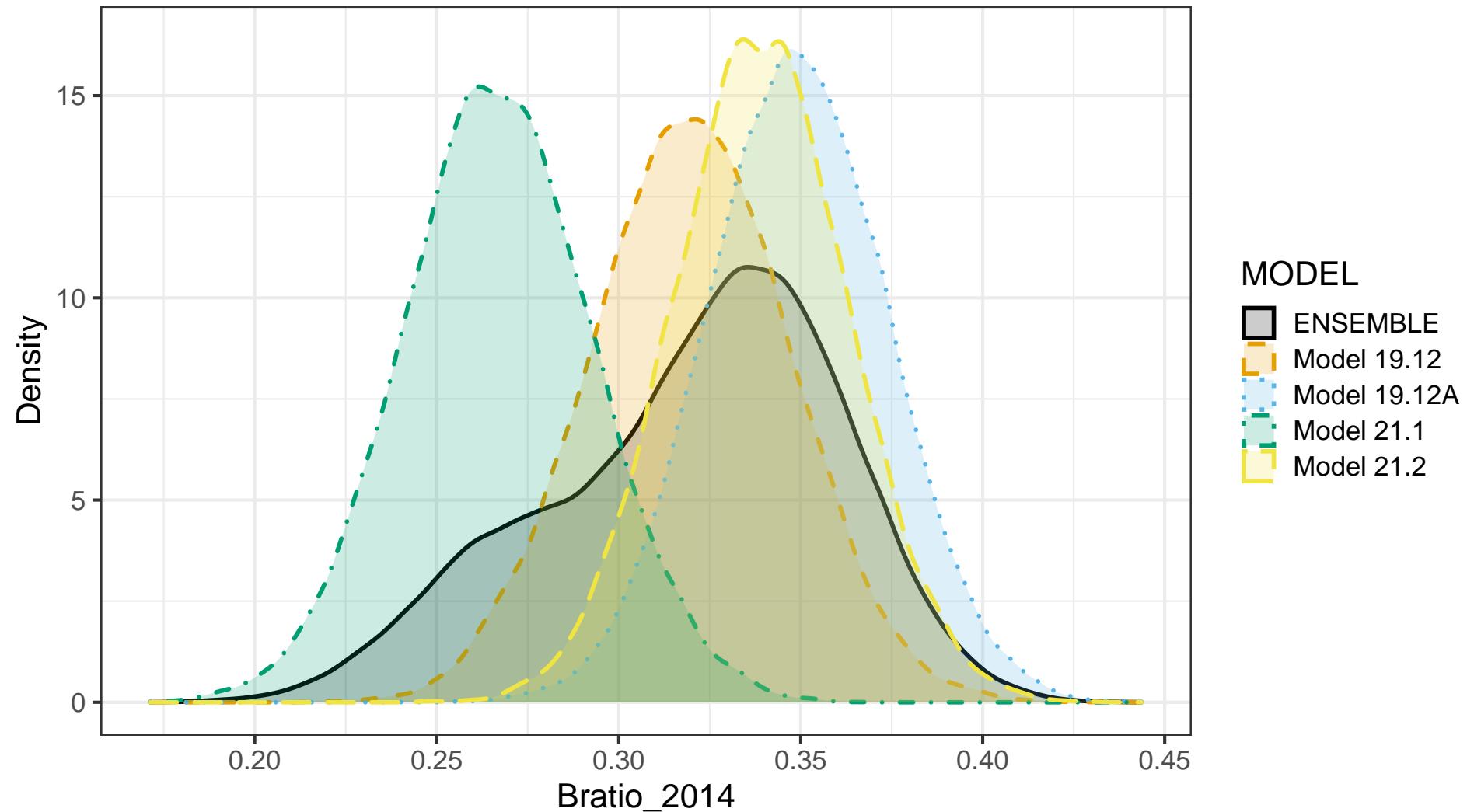
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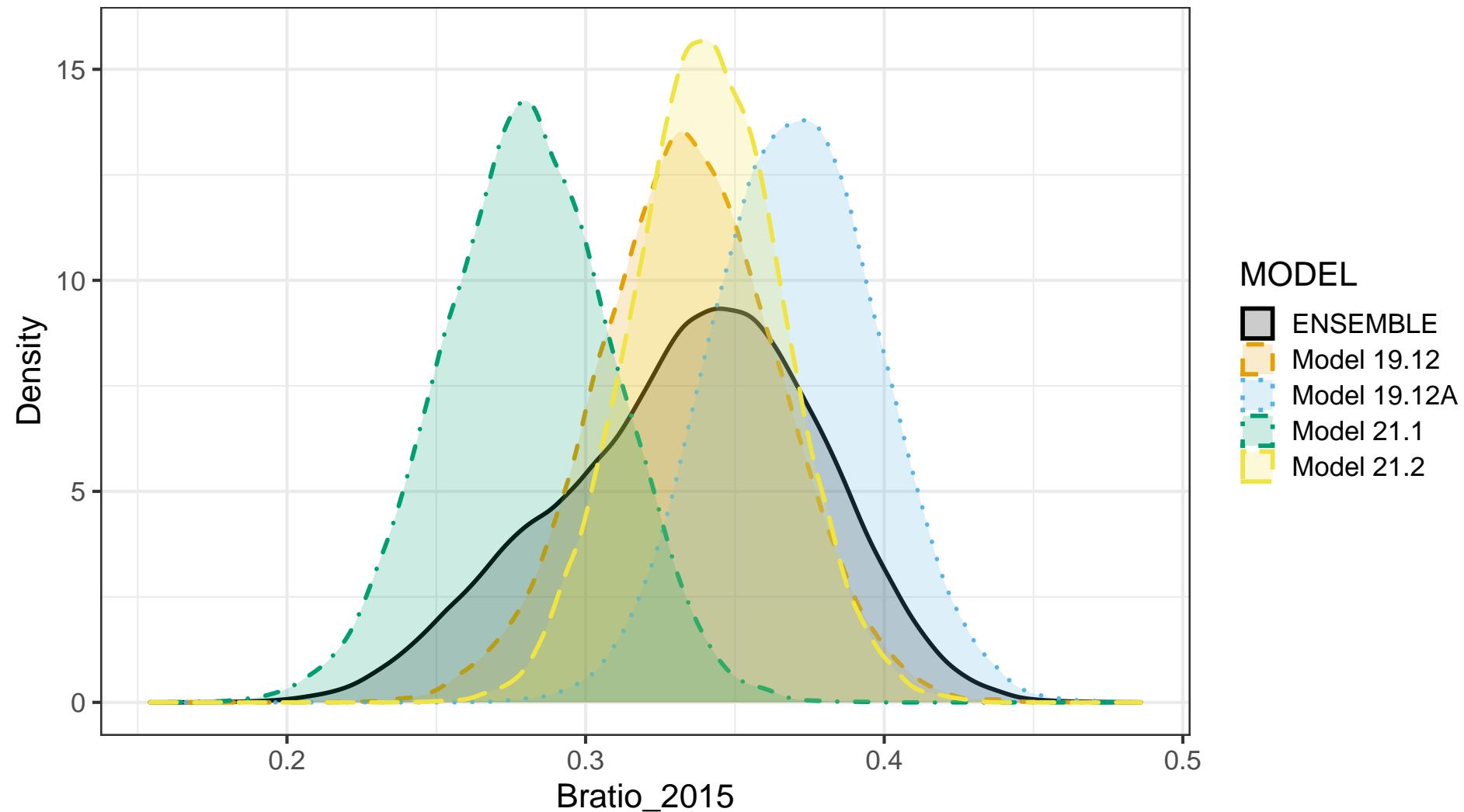
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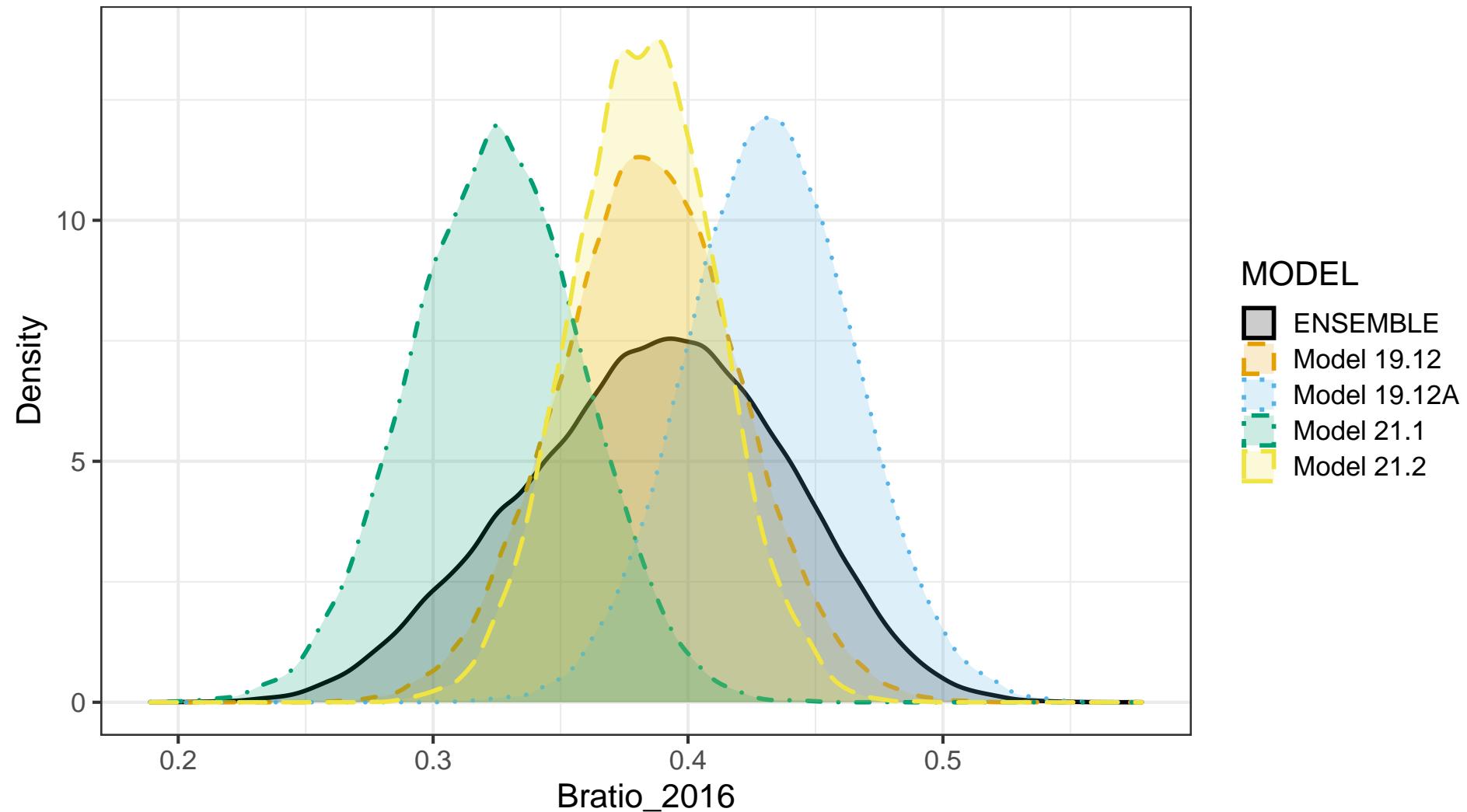
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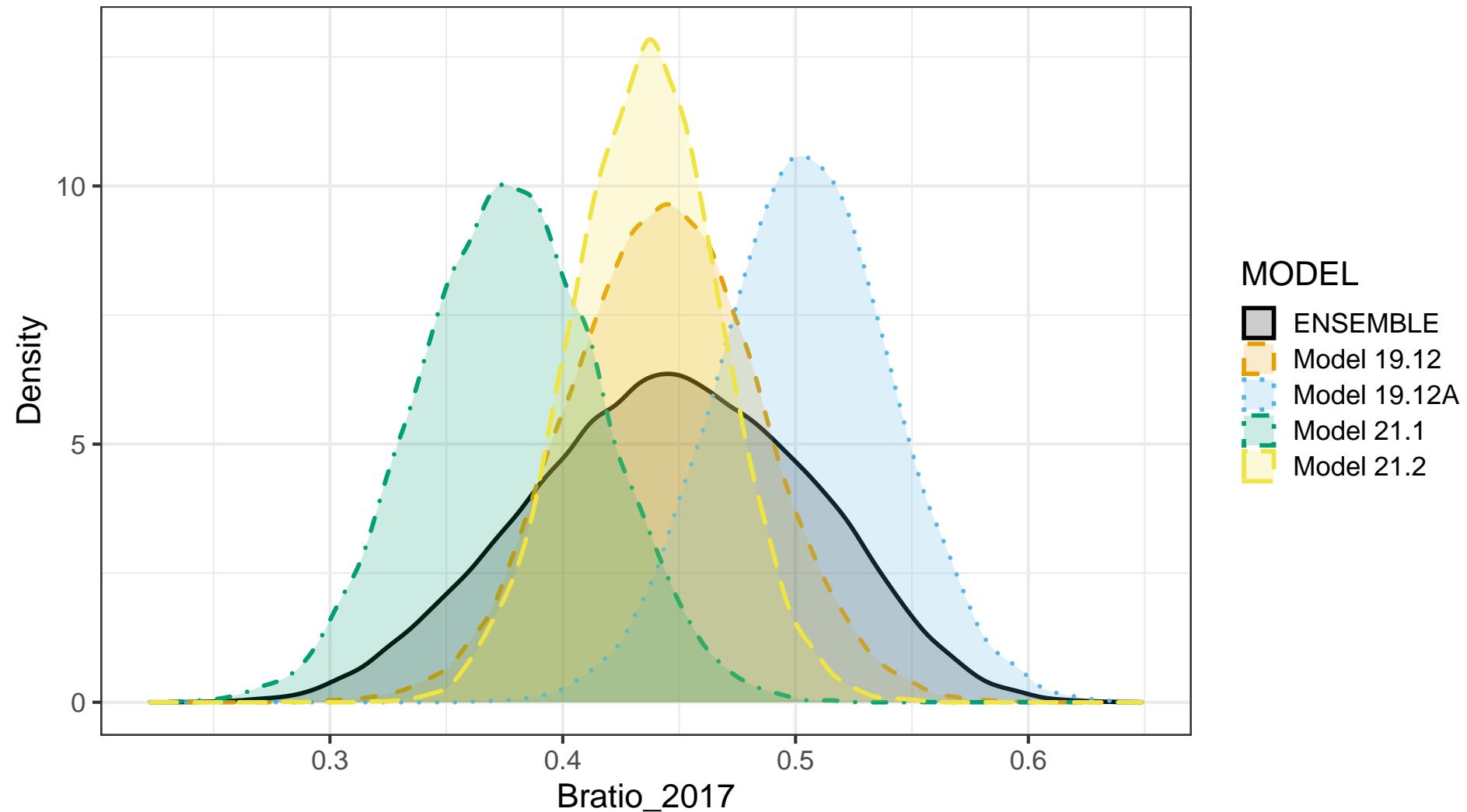
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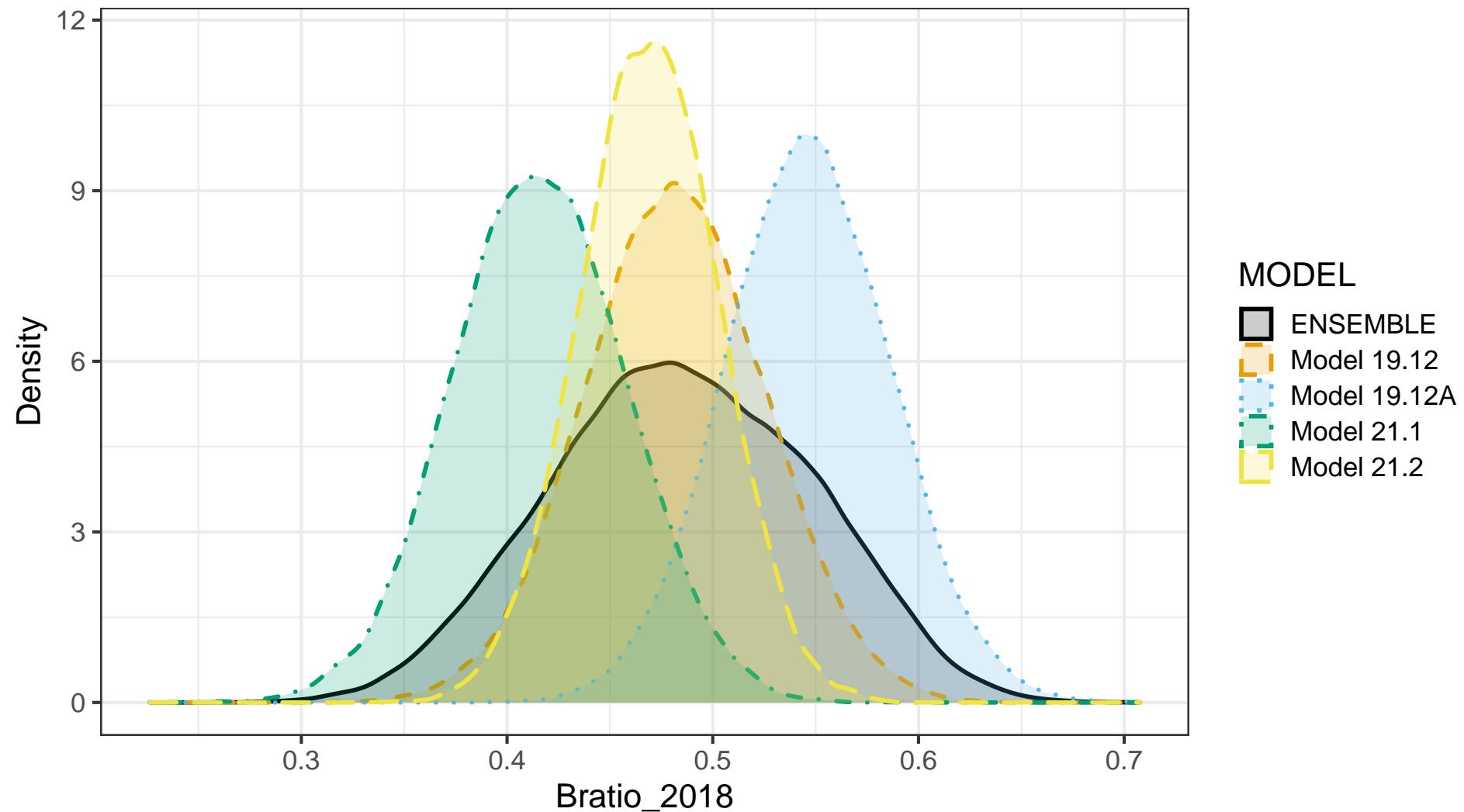
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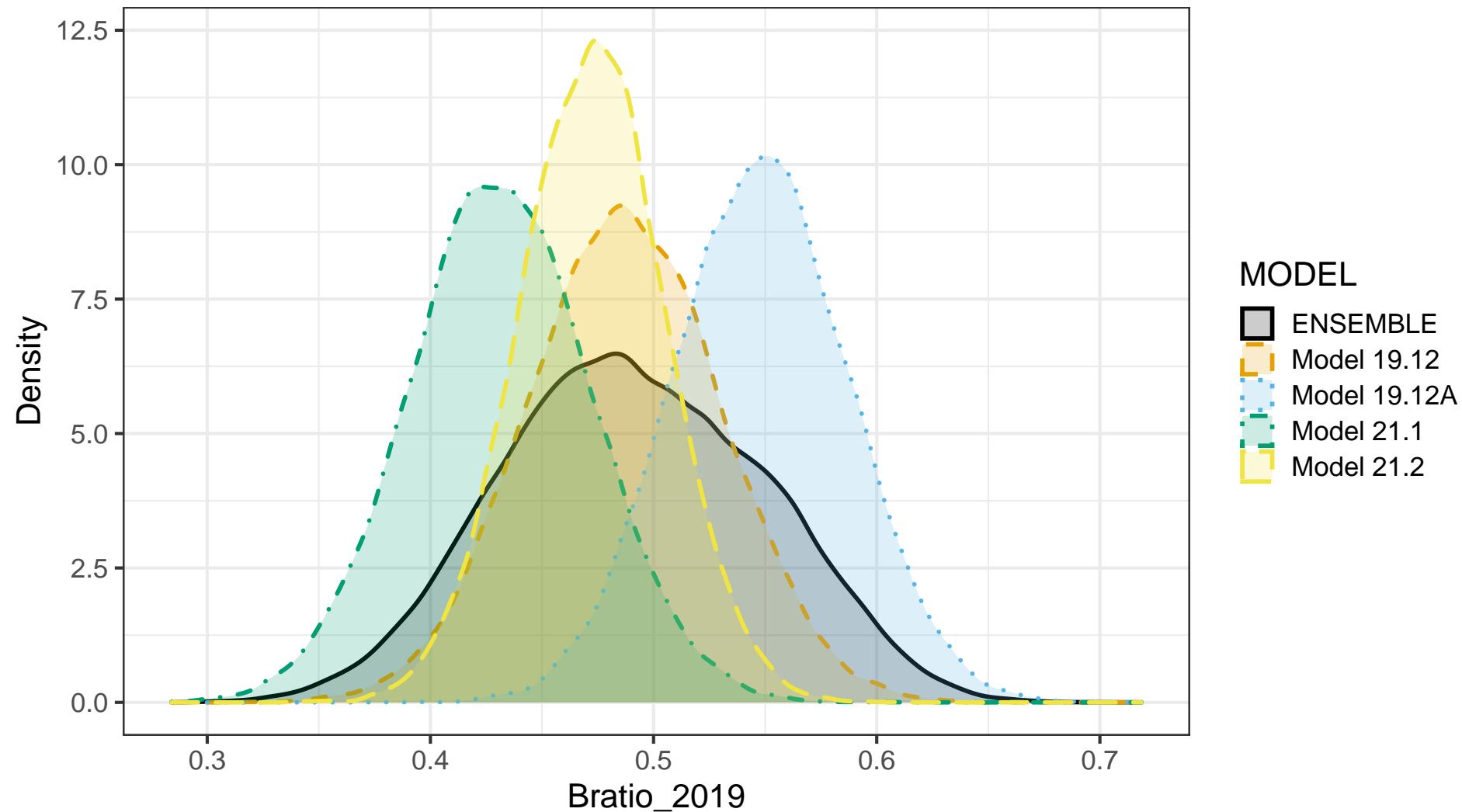
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Bratio_2018



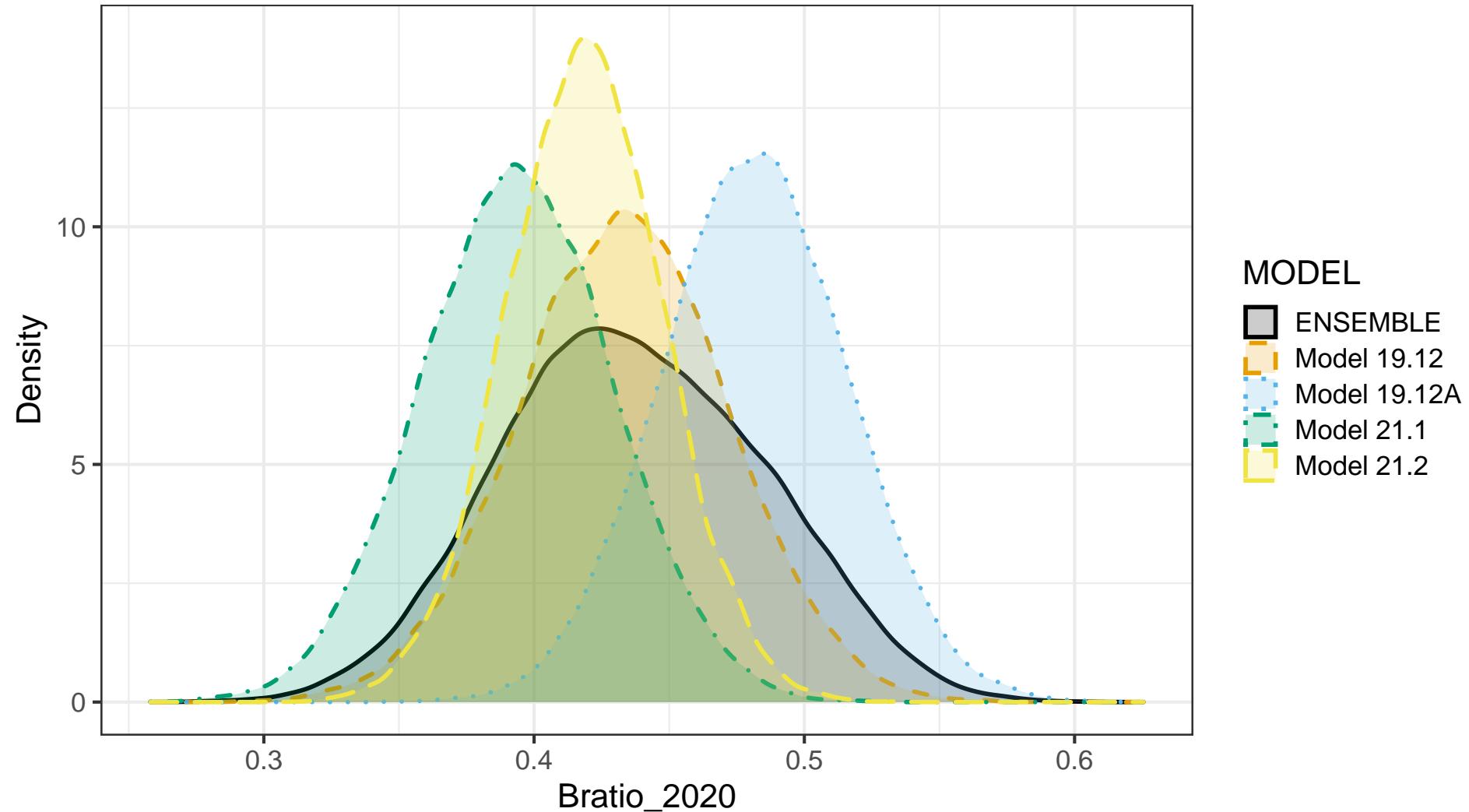
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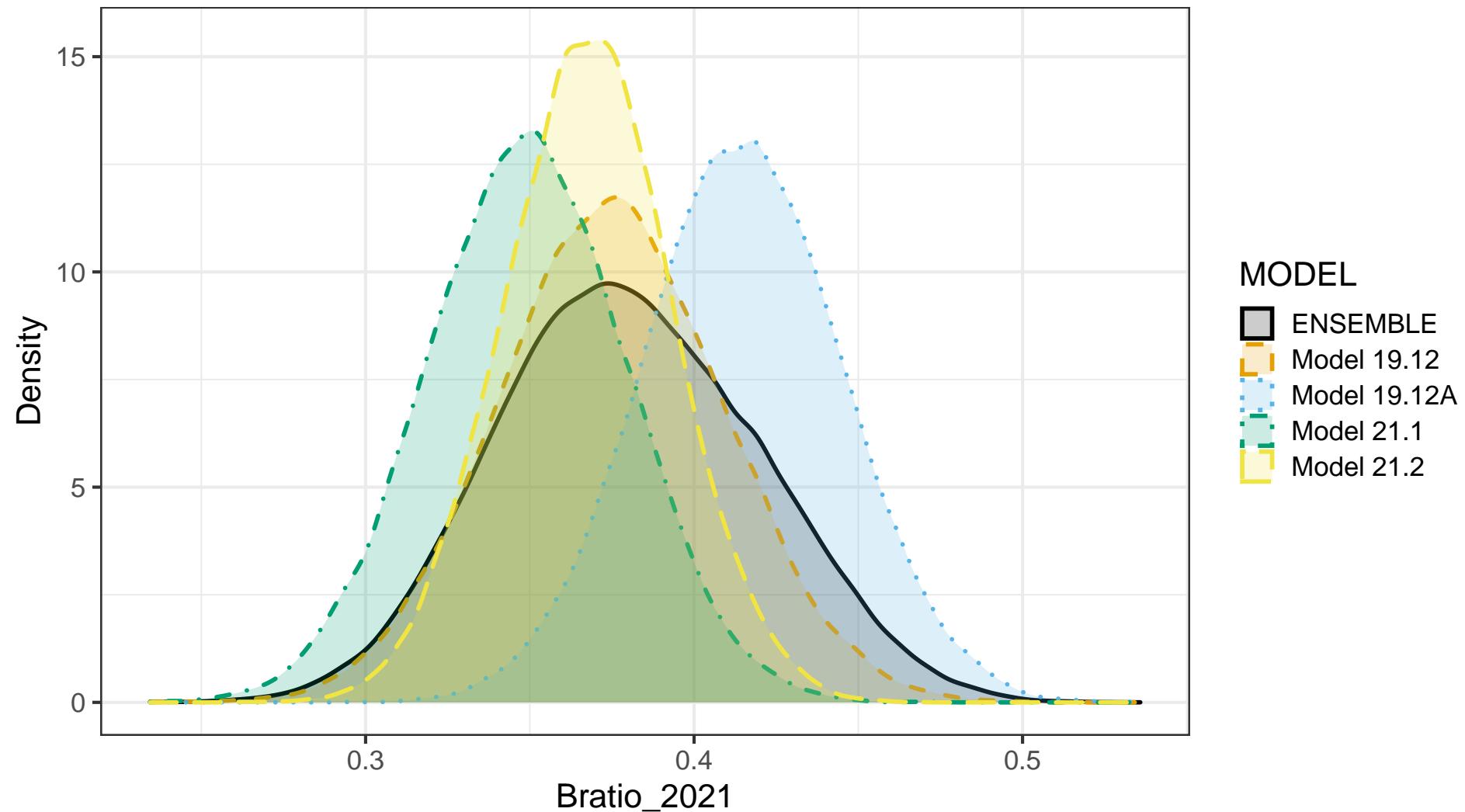
MODEL

- ENSEMBLE
- Model 19.12
- Model 19.12A
- Model 21.1
- Model 21.2

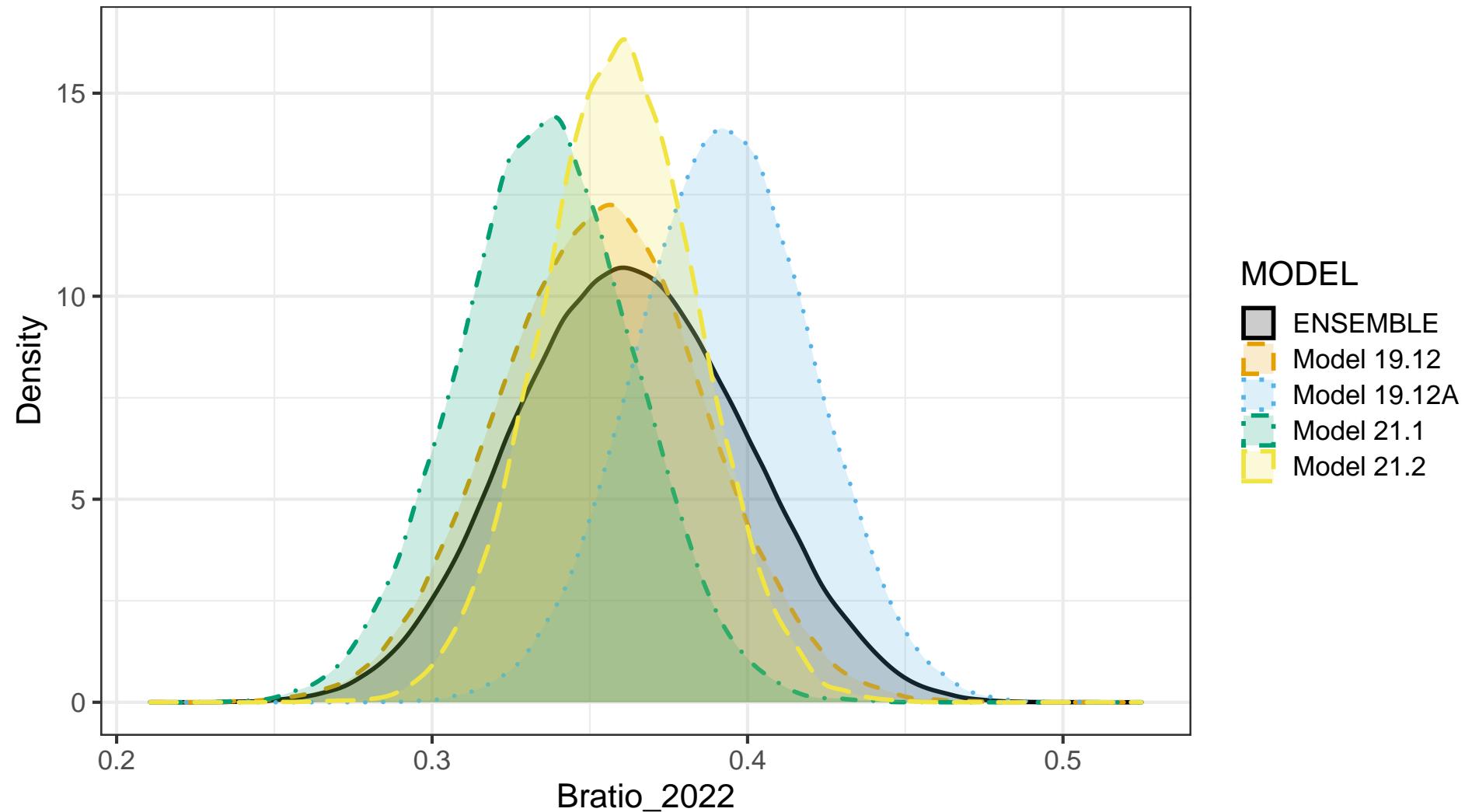
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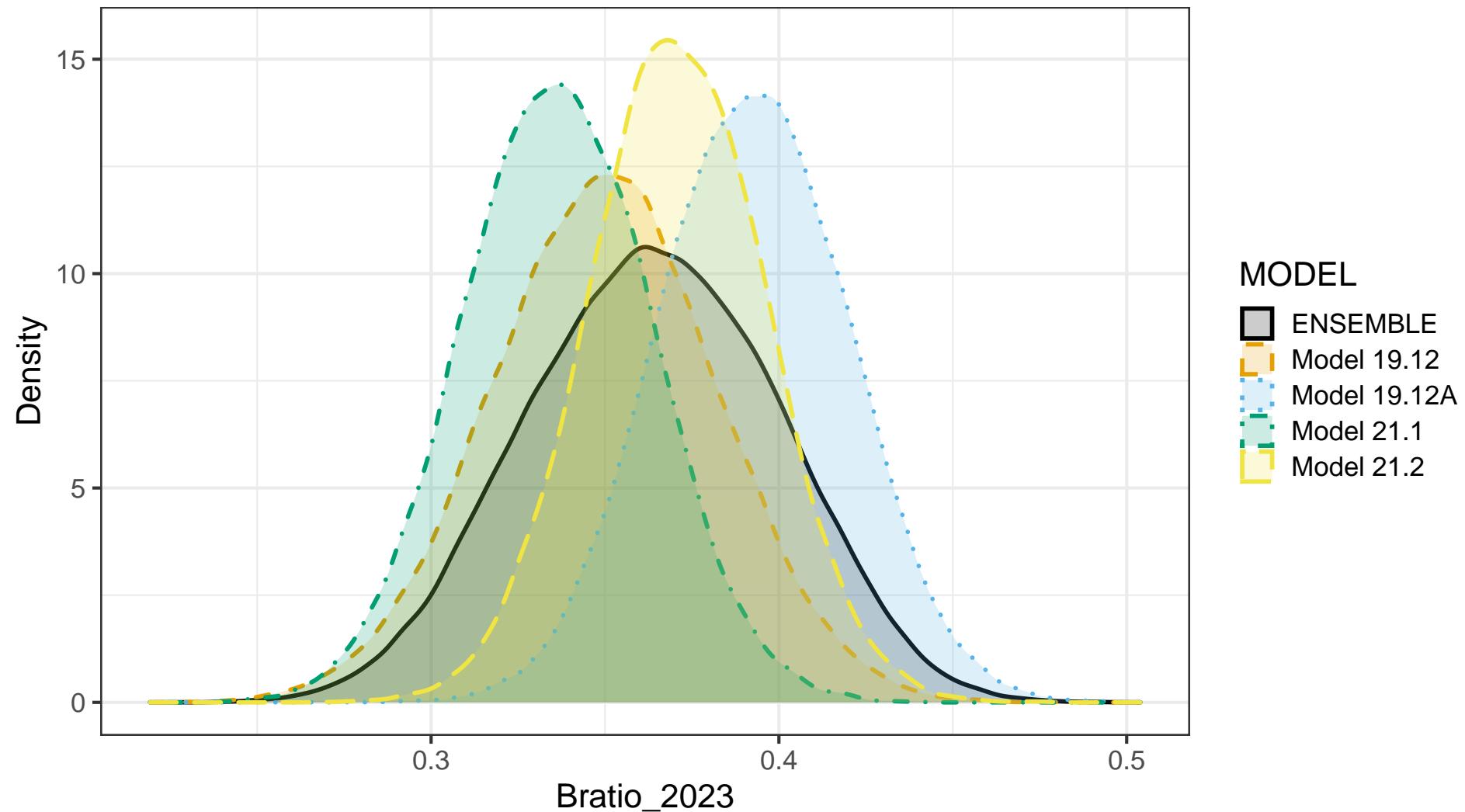
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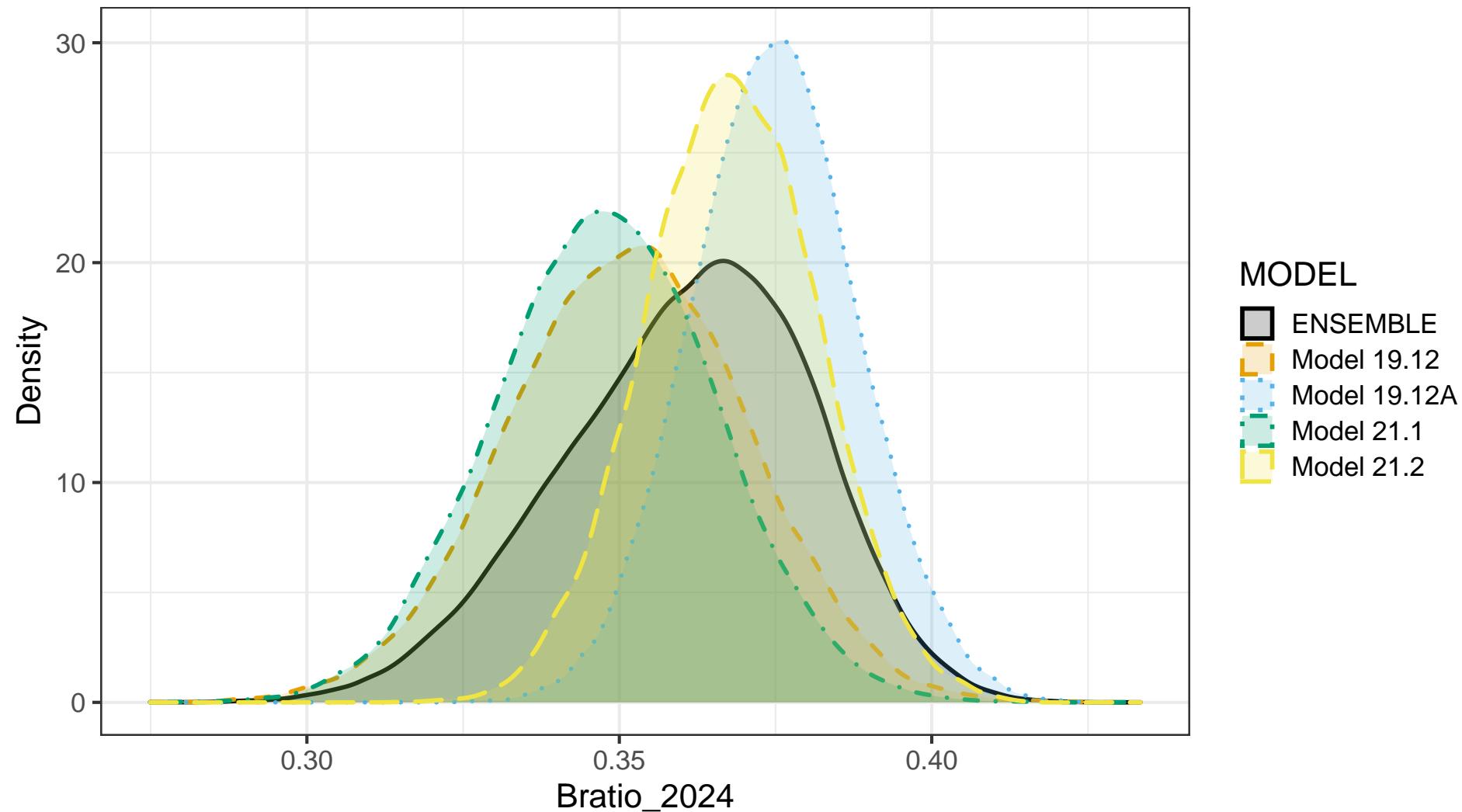
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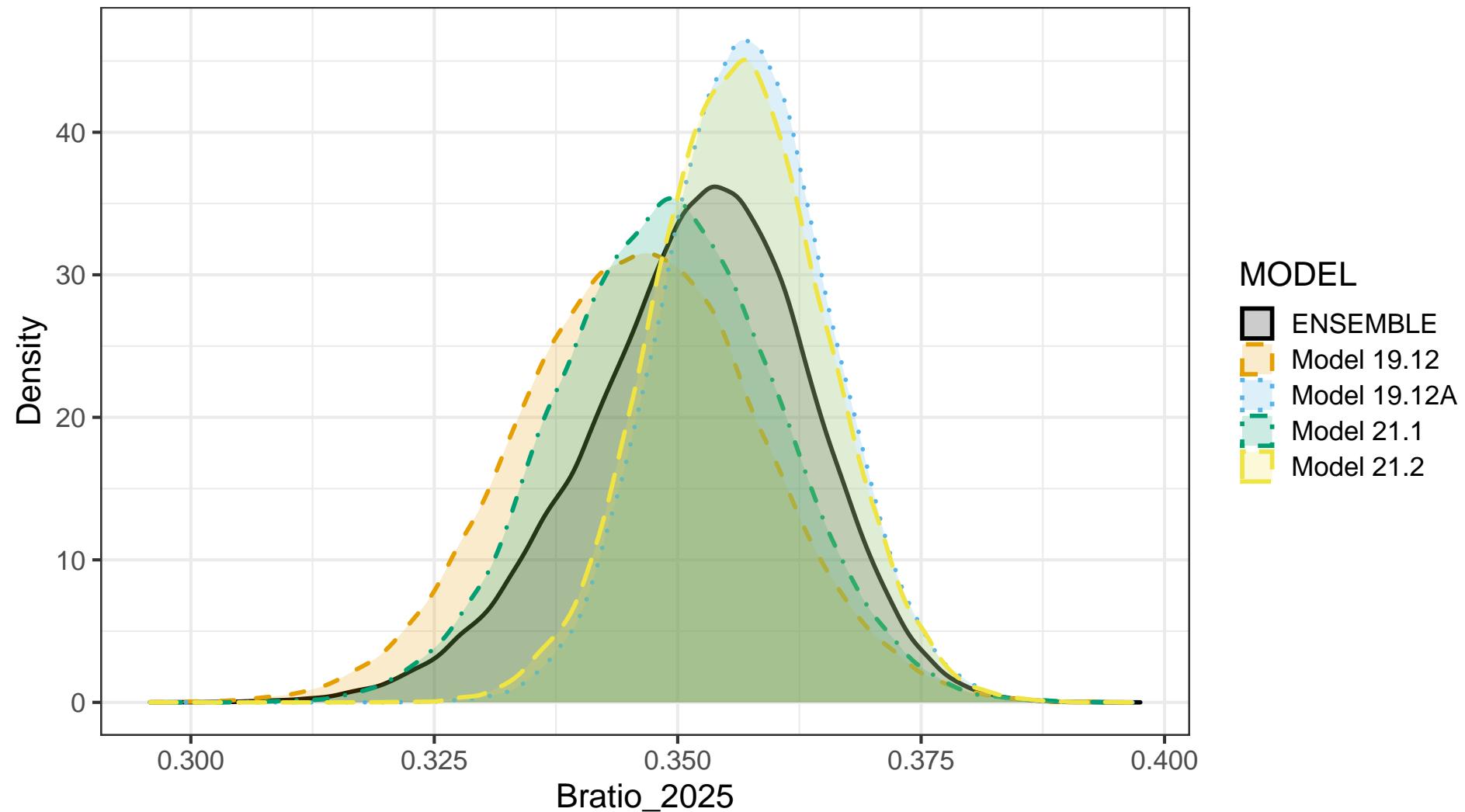
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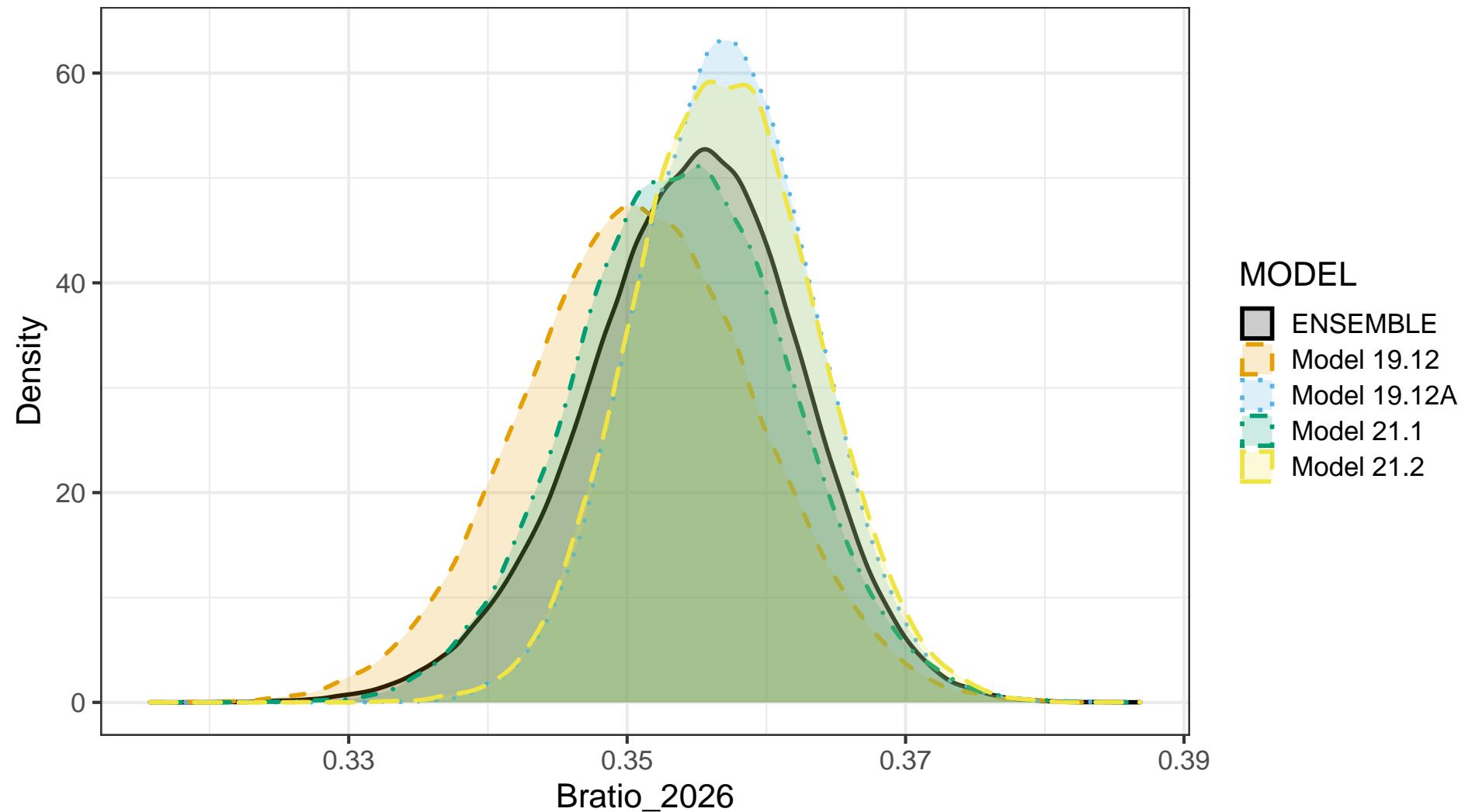
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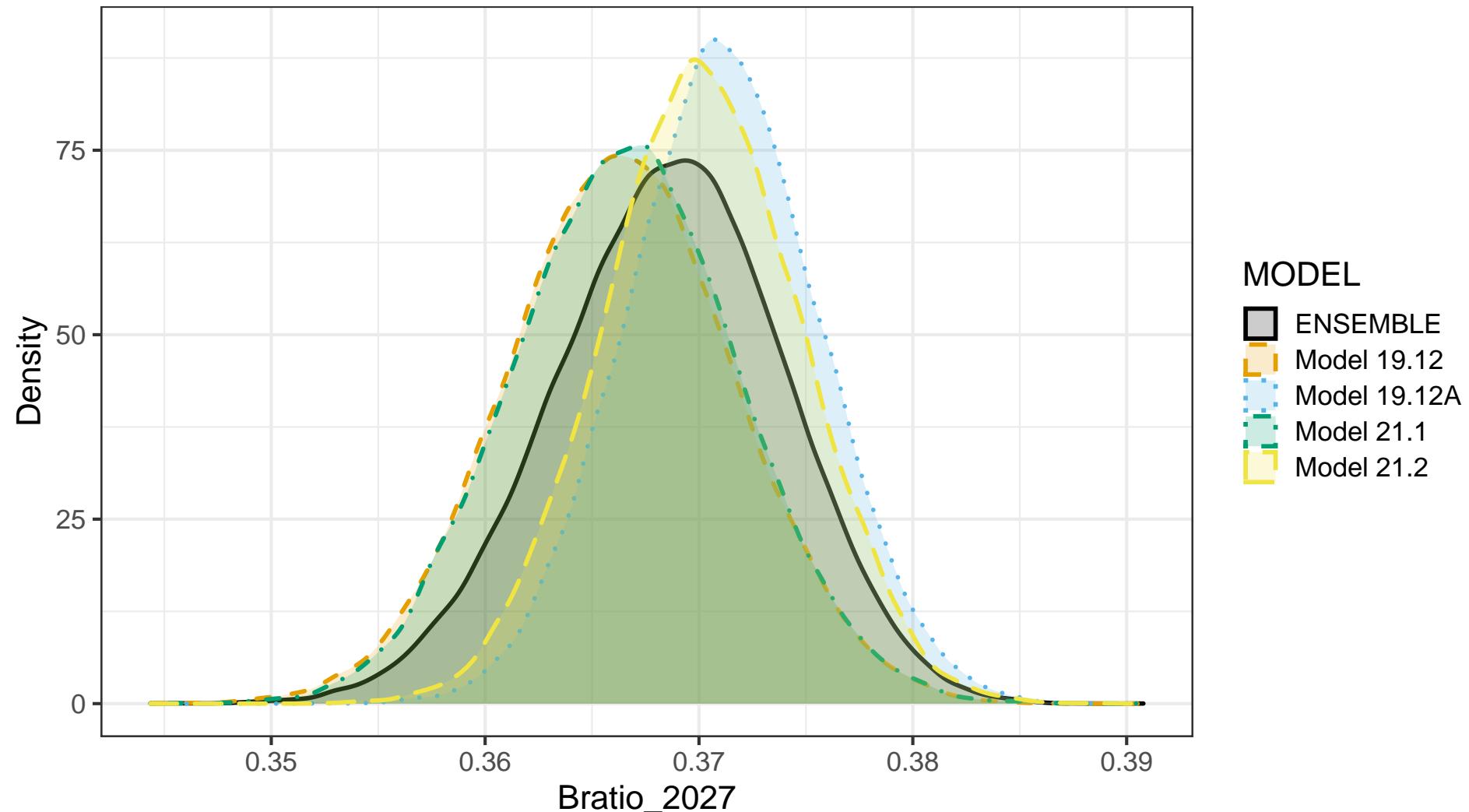
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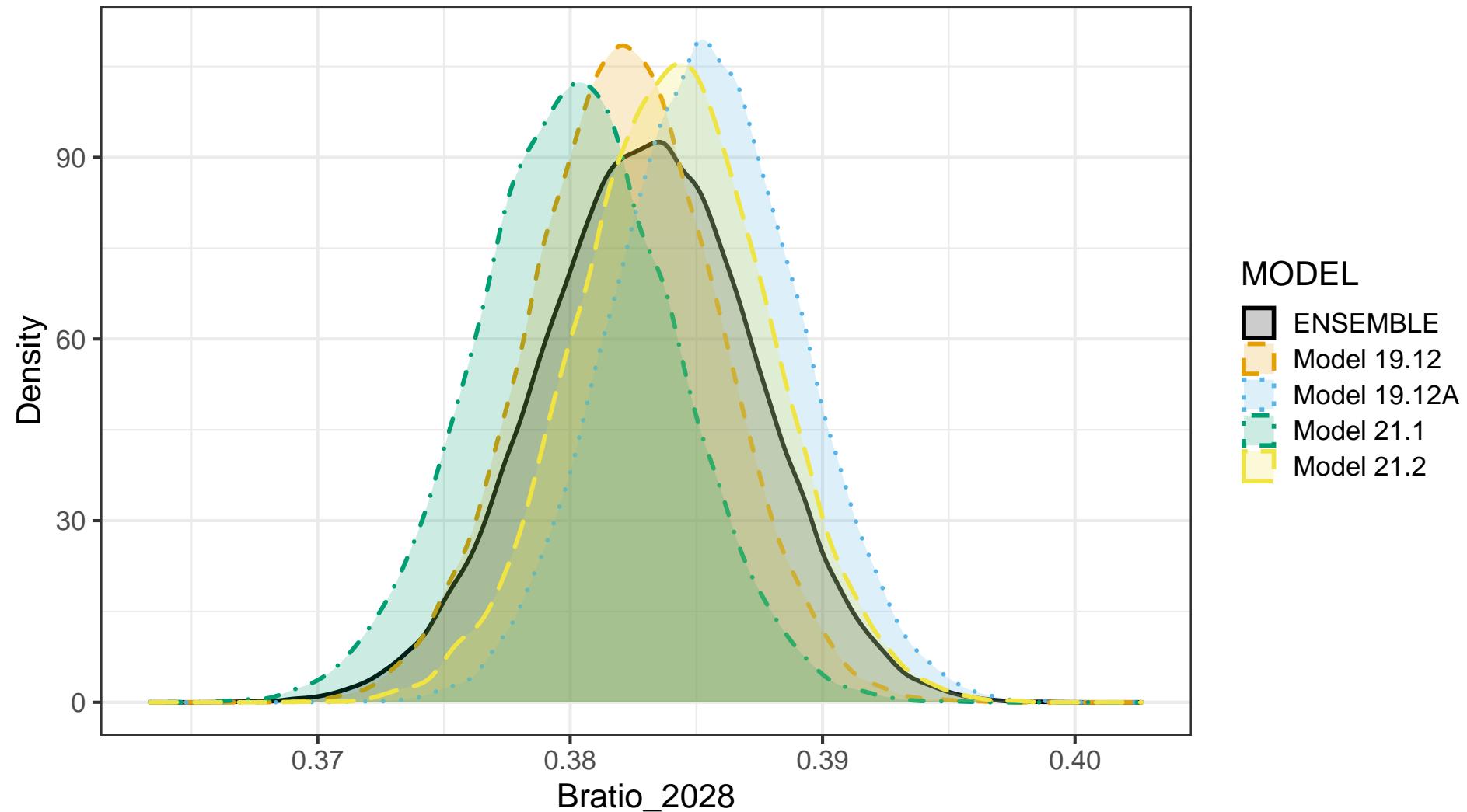
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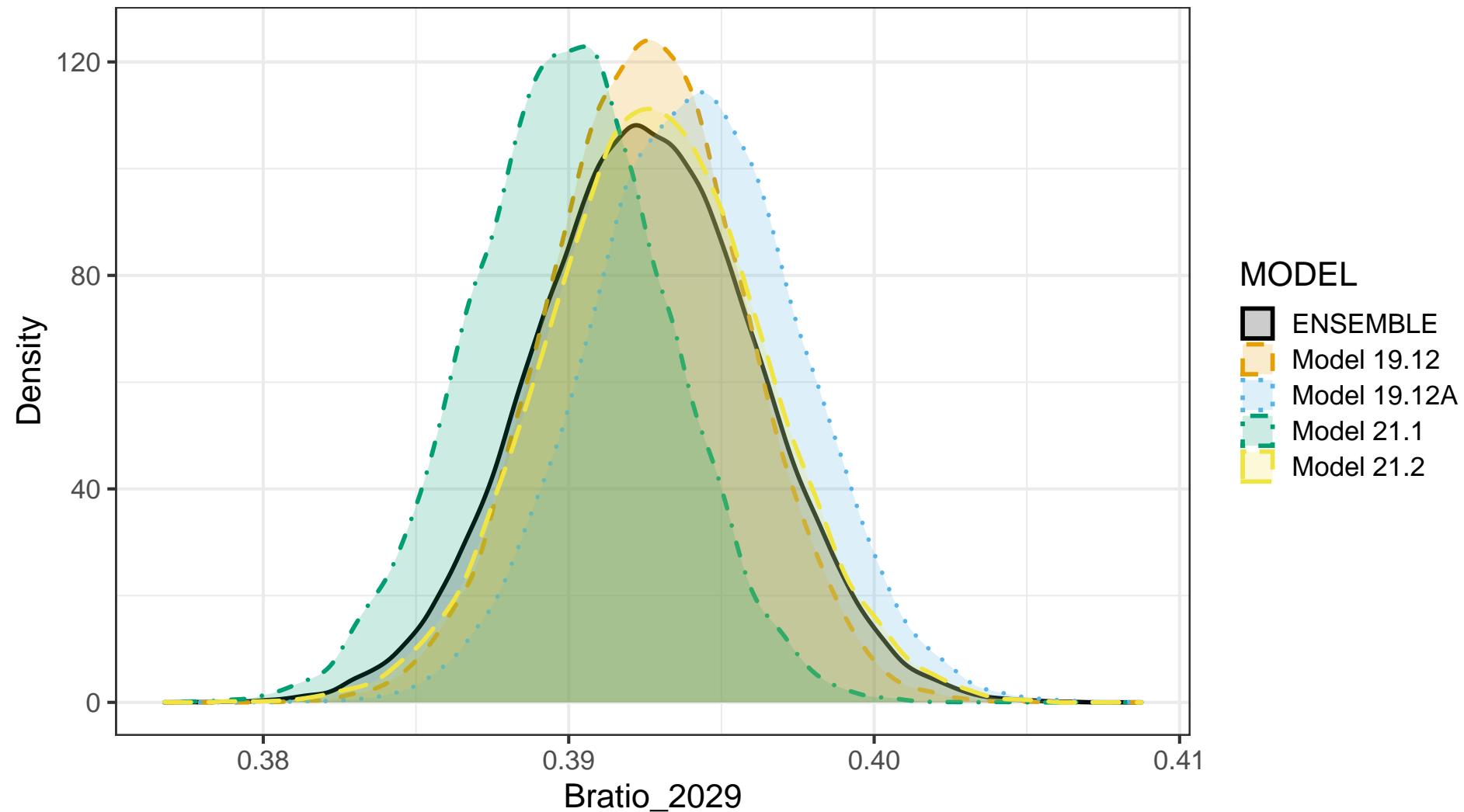
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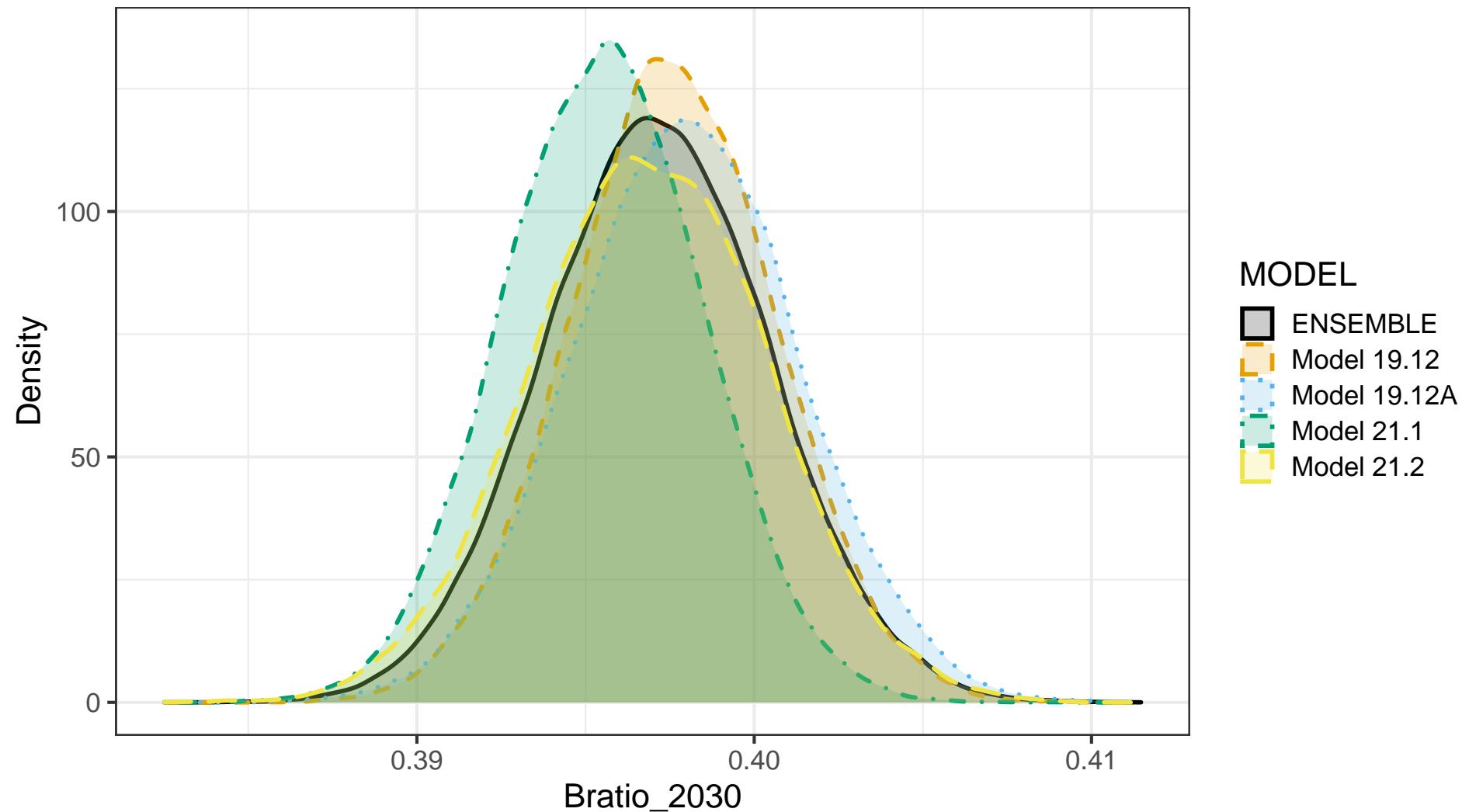
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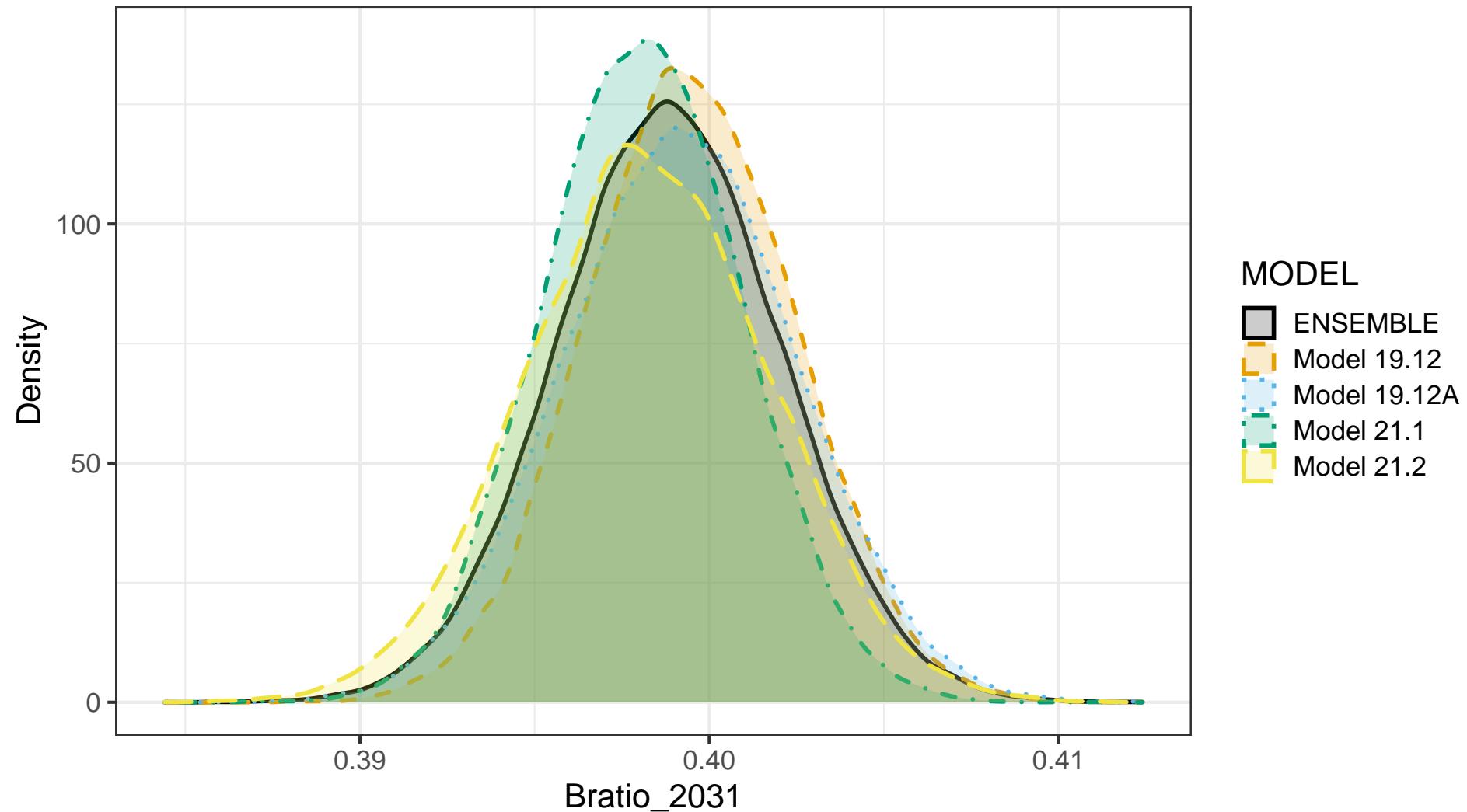
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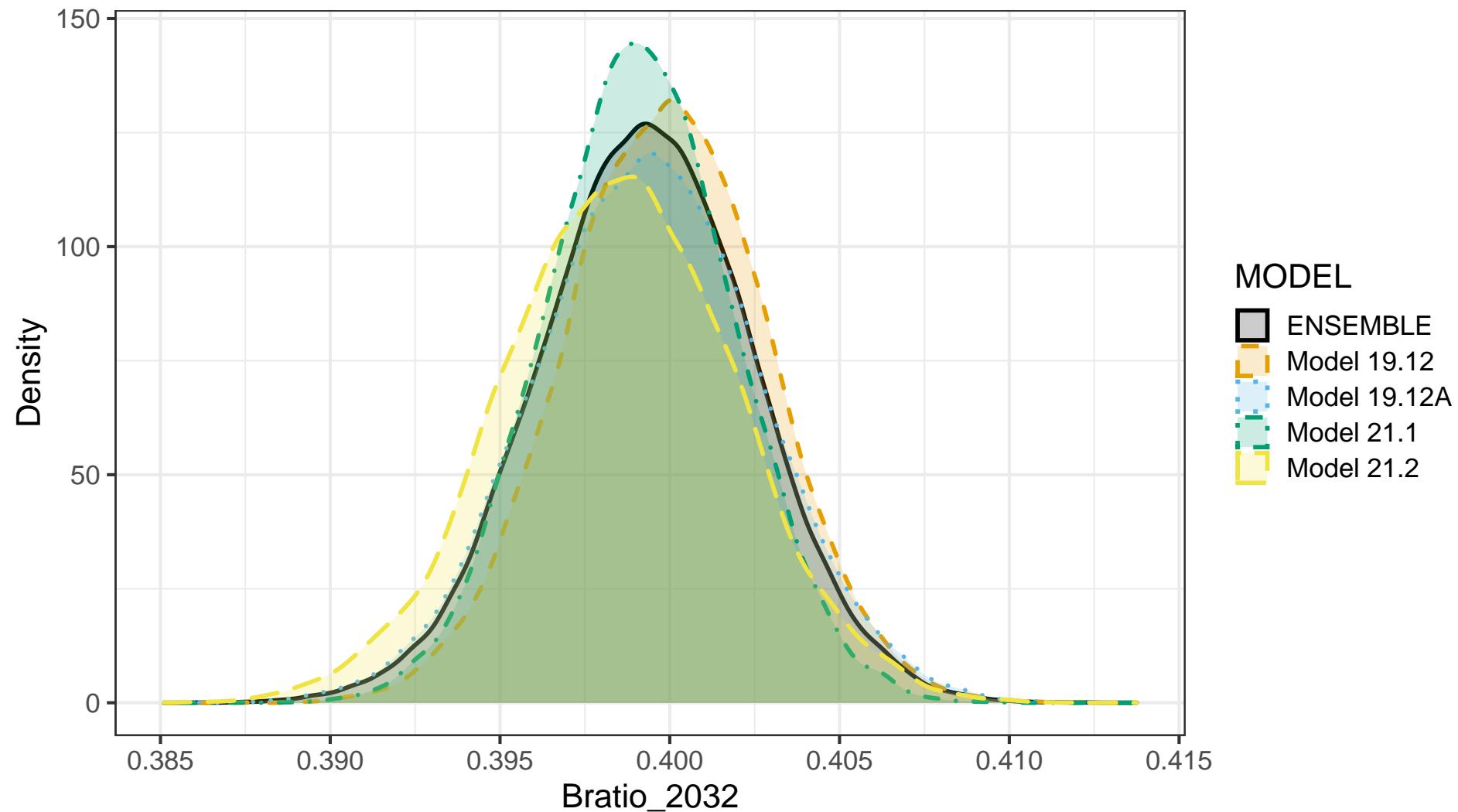
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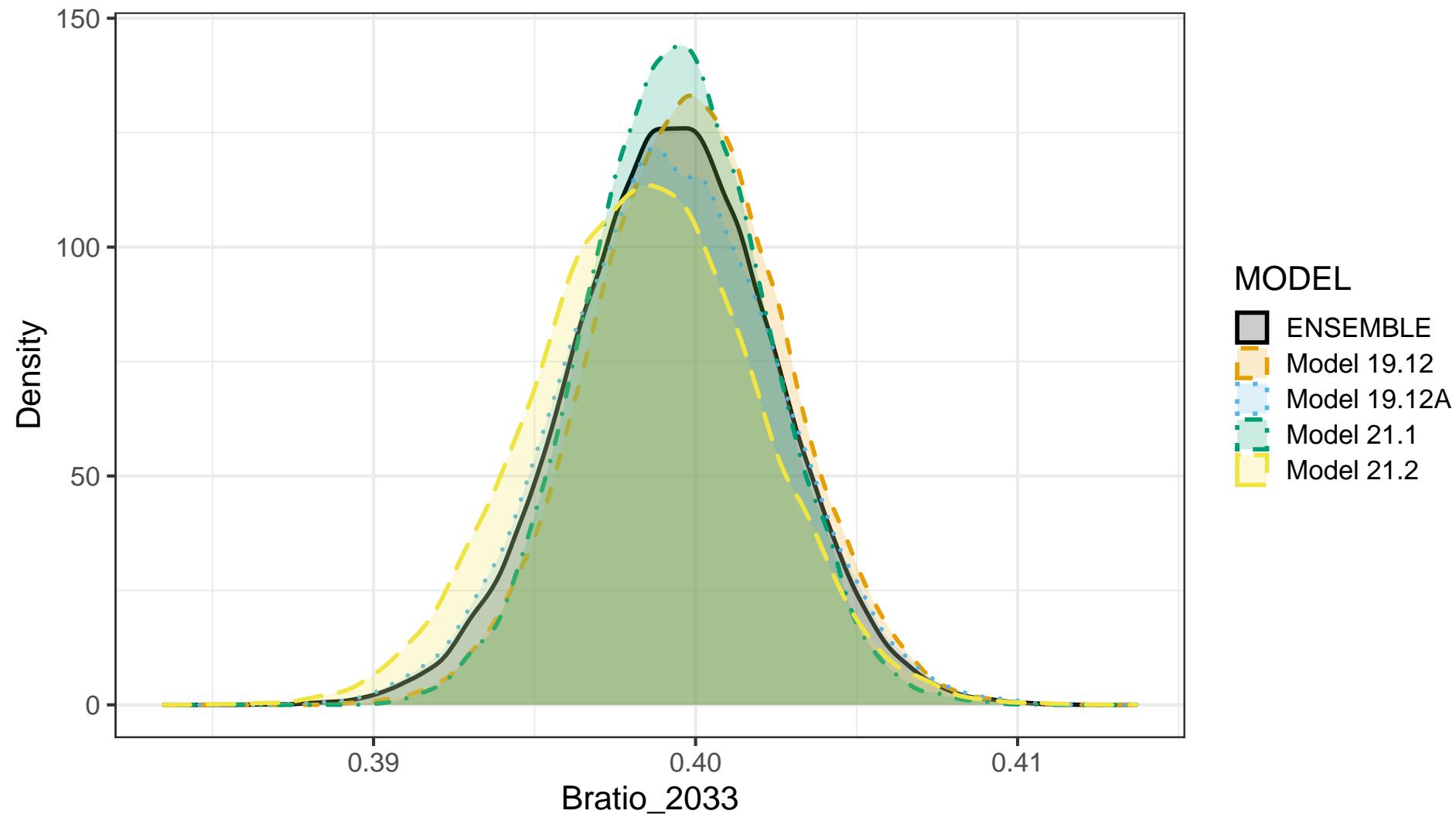
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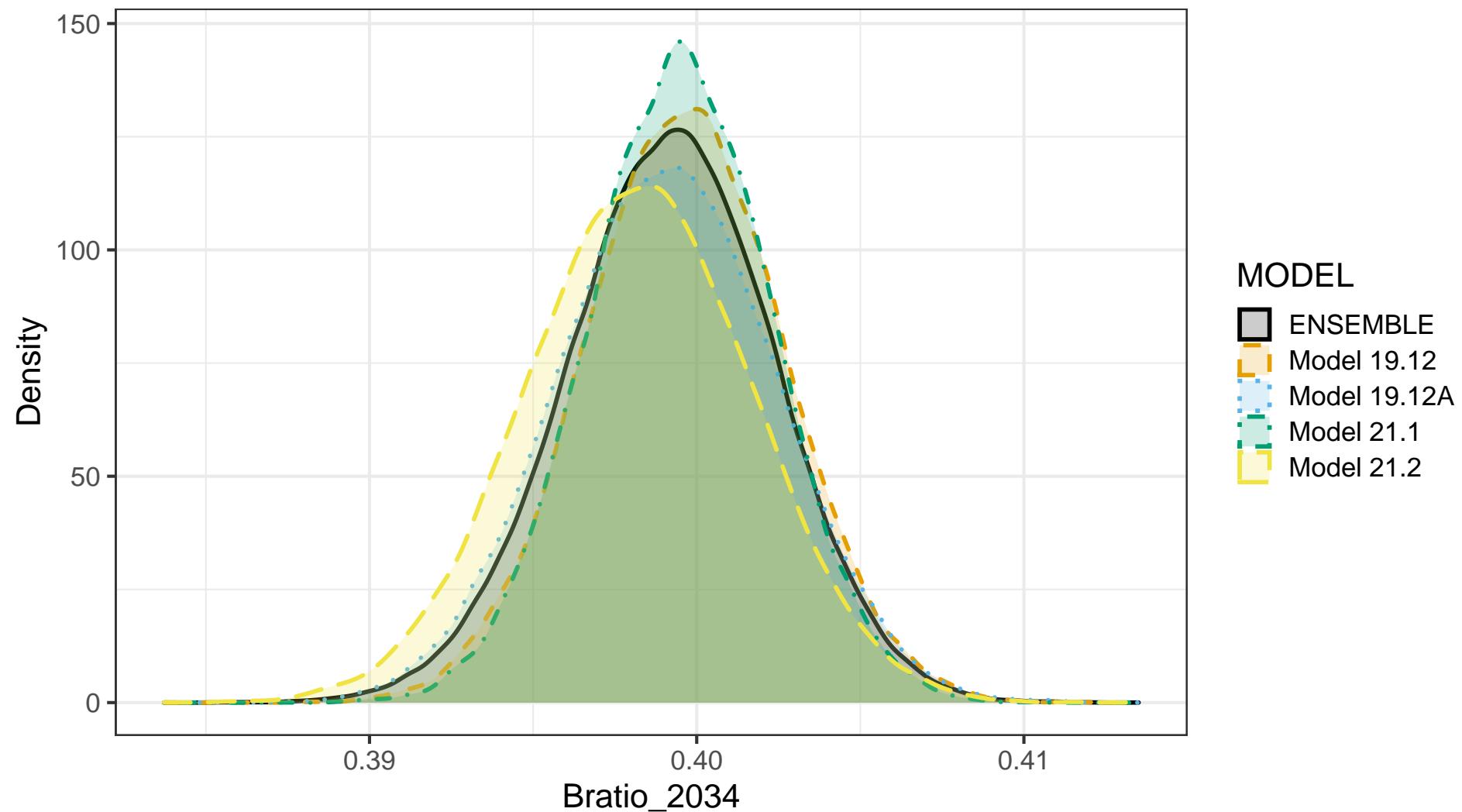
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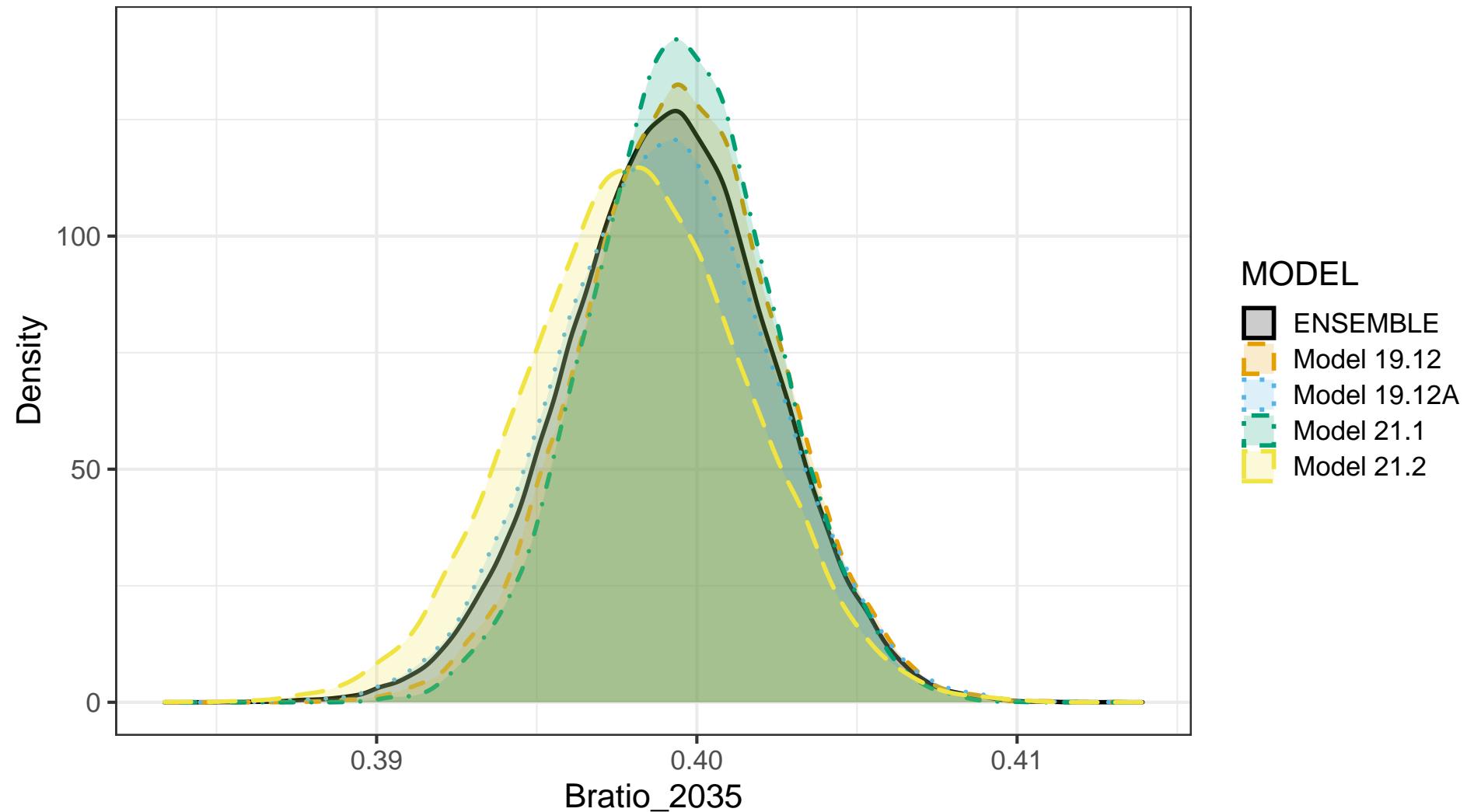
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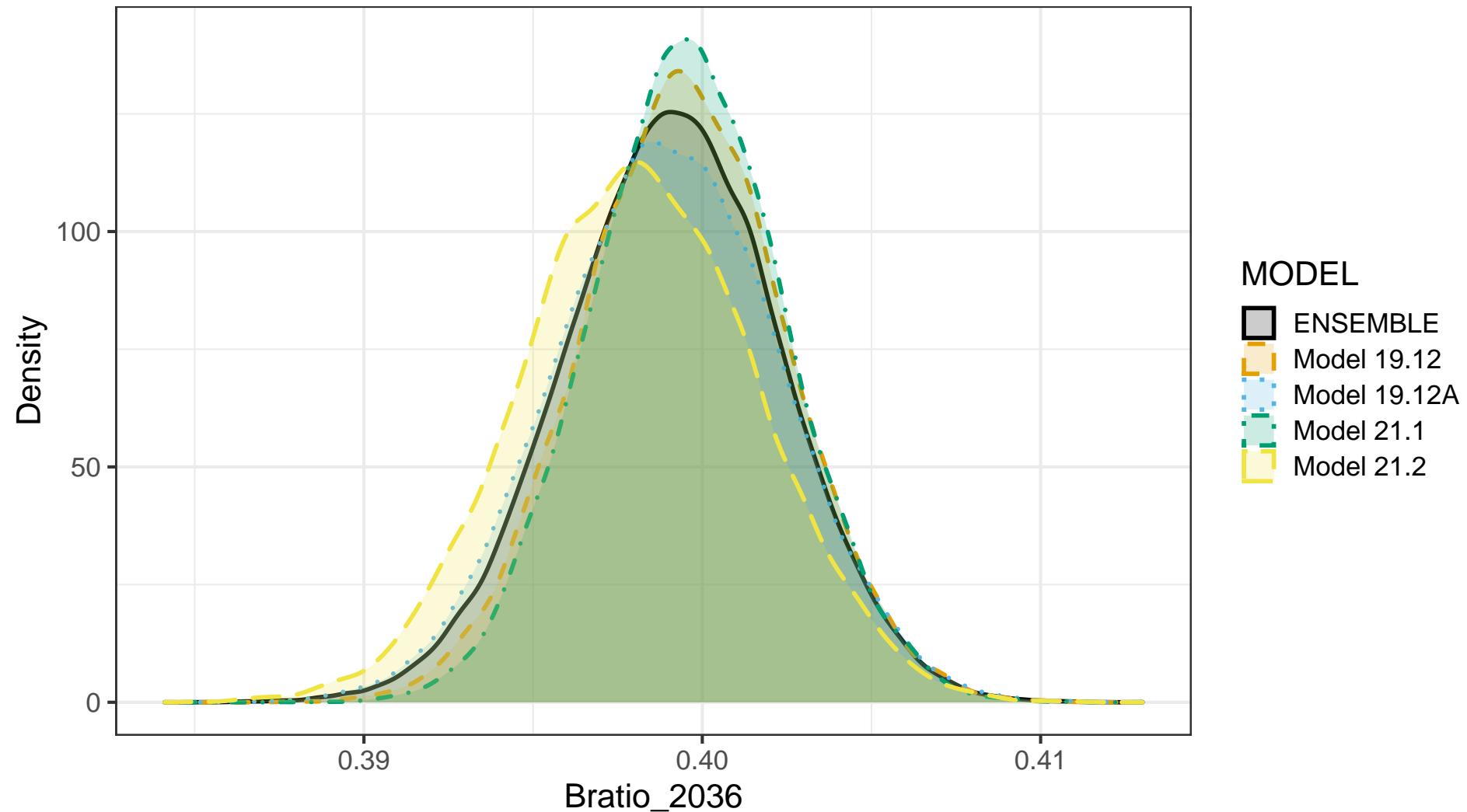
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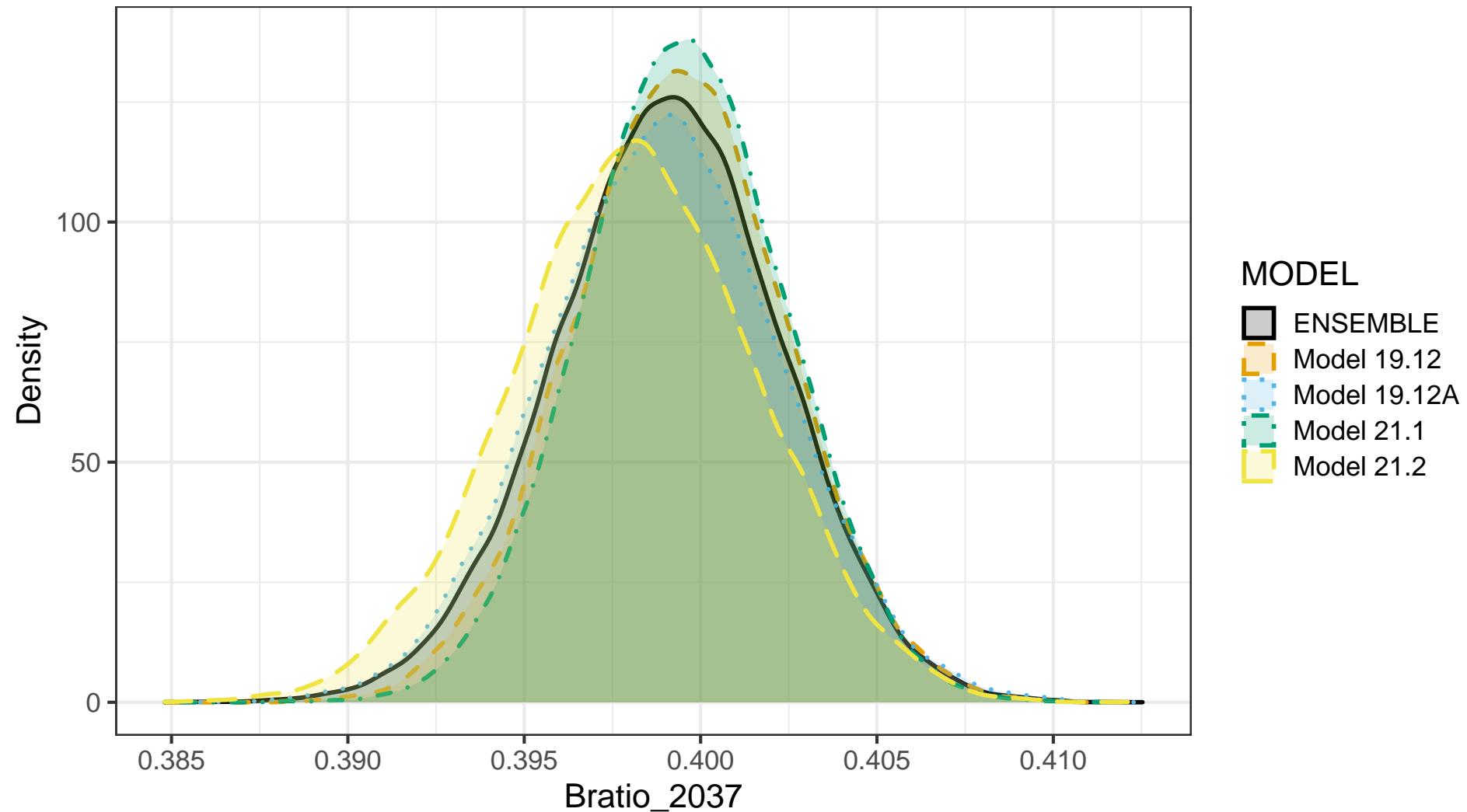
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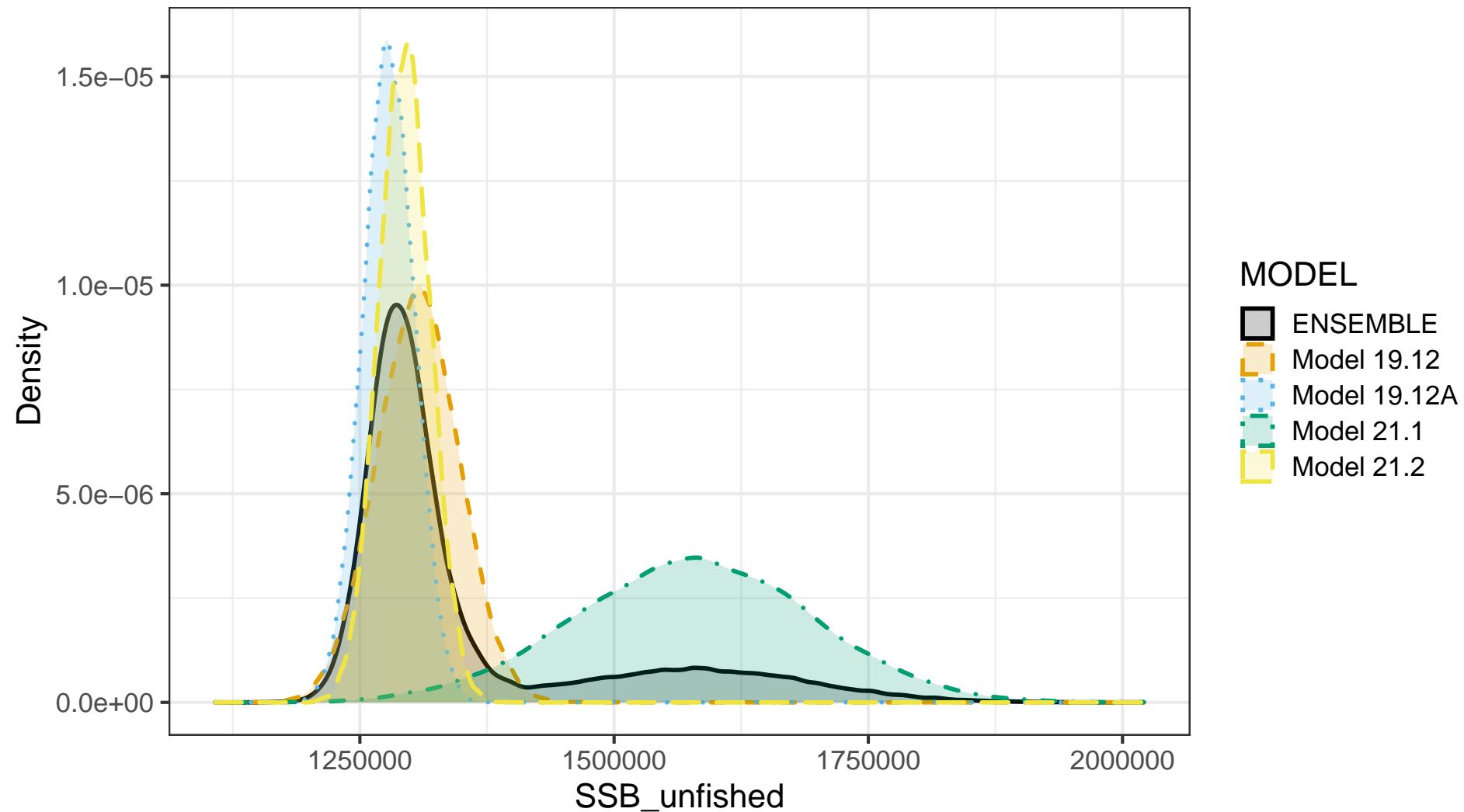
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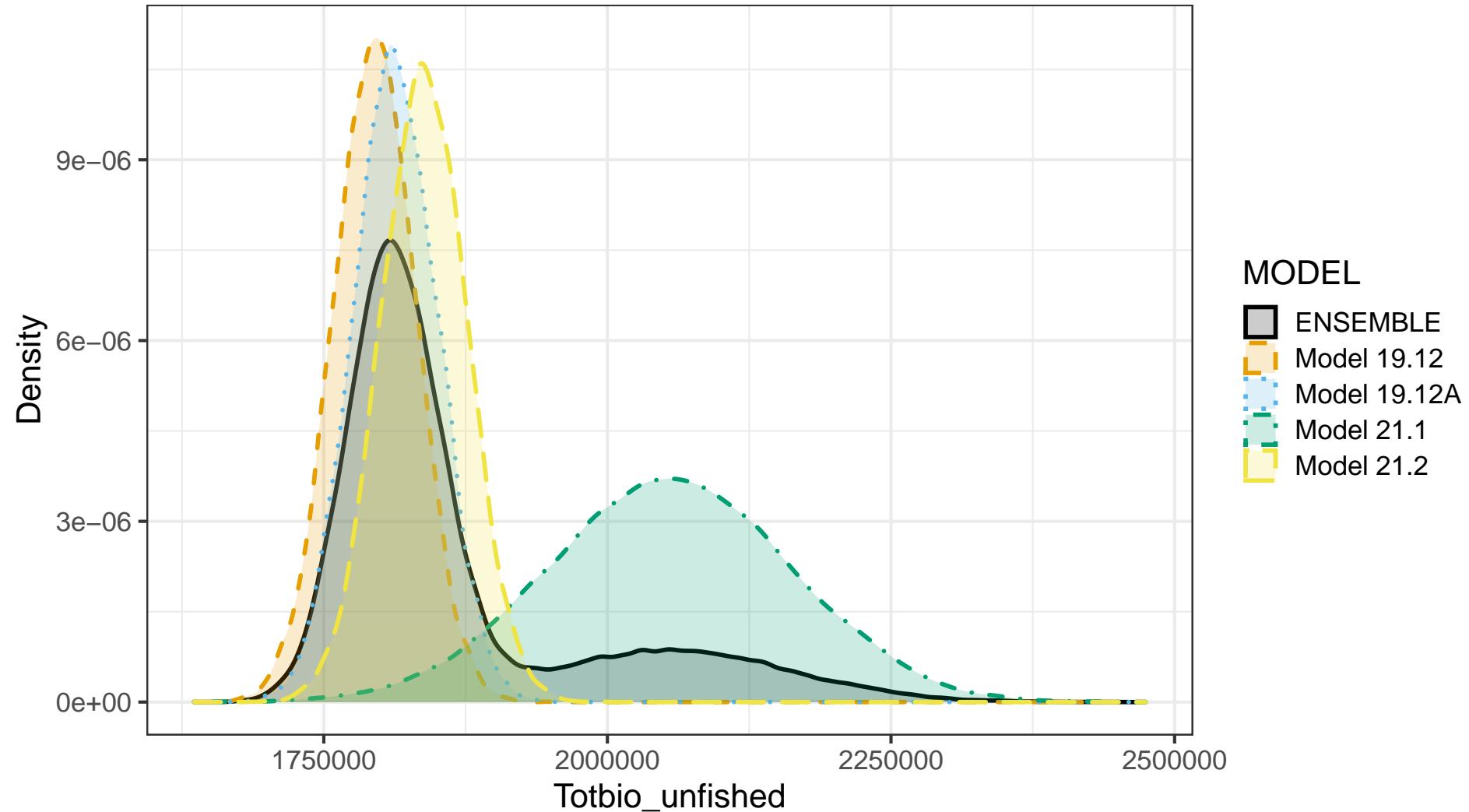
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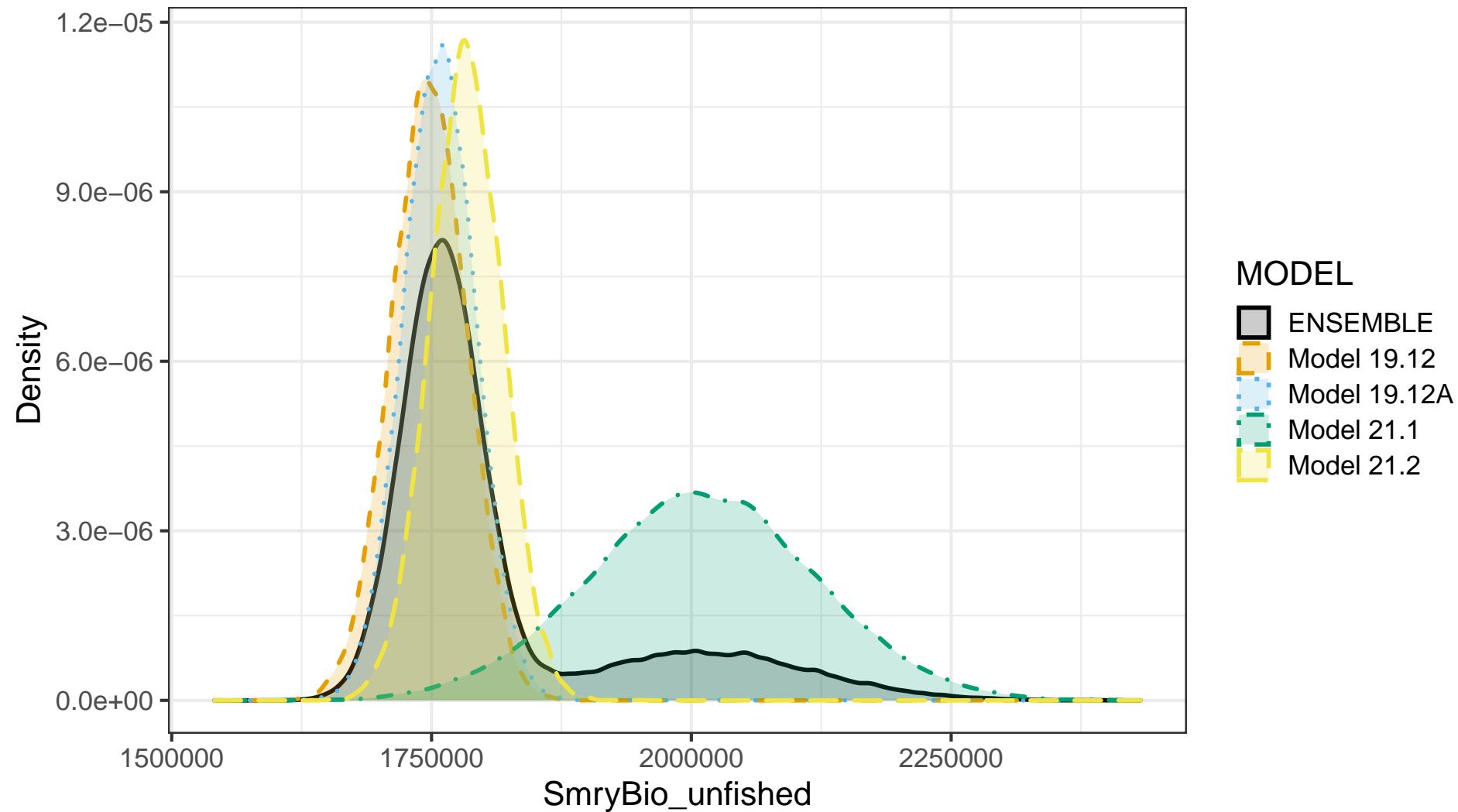
SSB_unfished



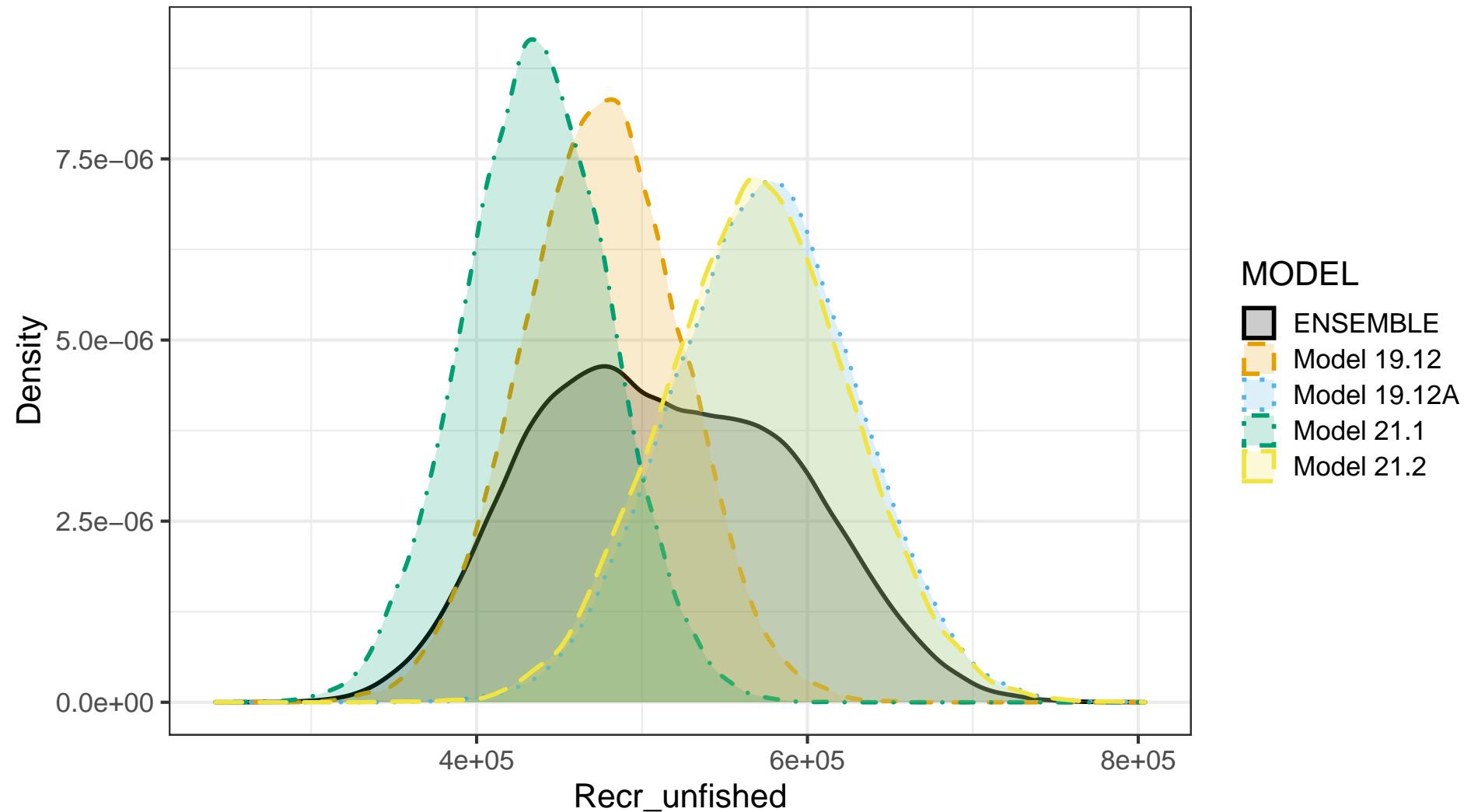
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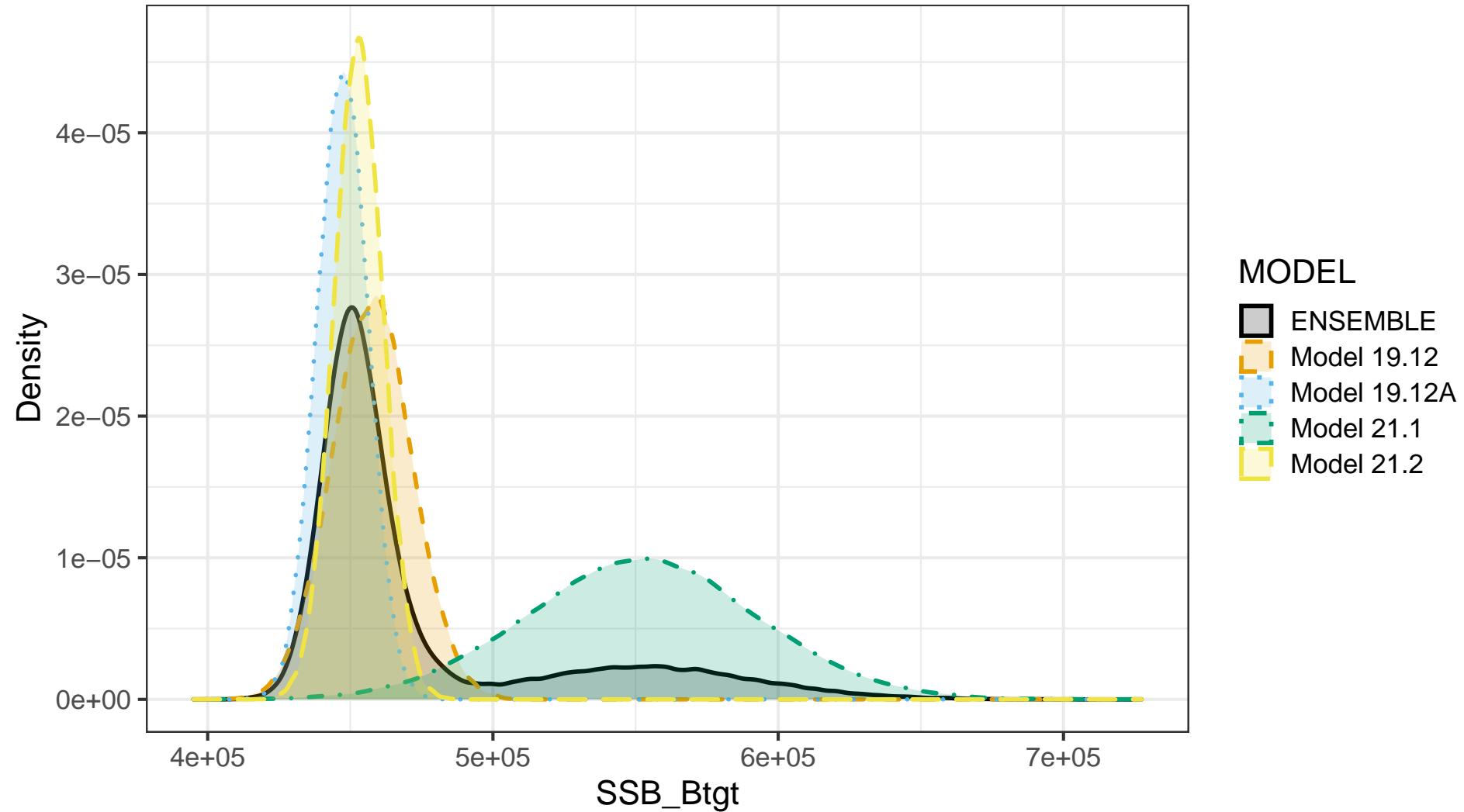
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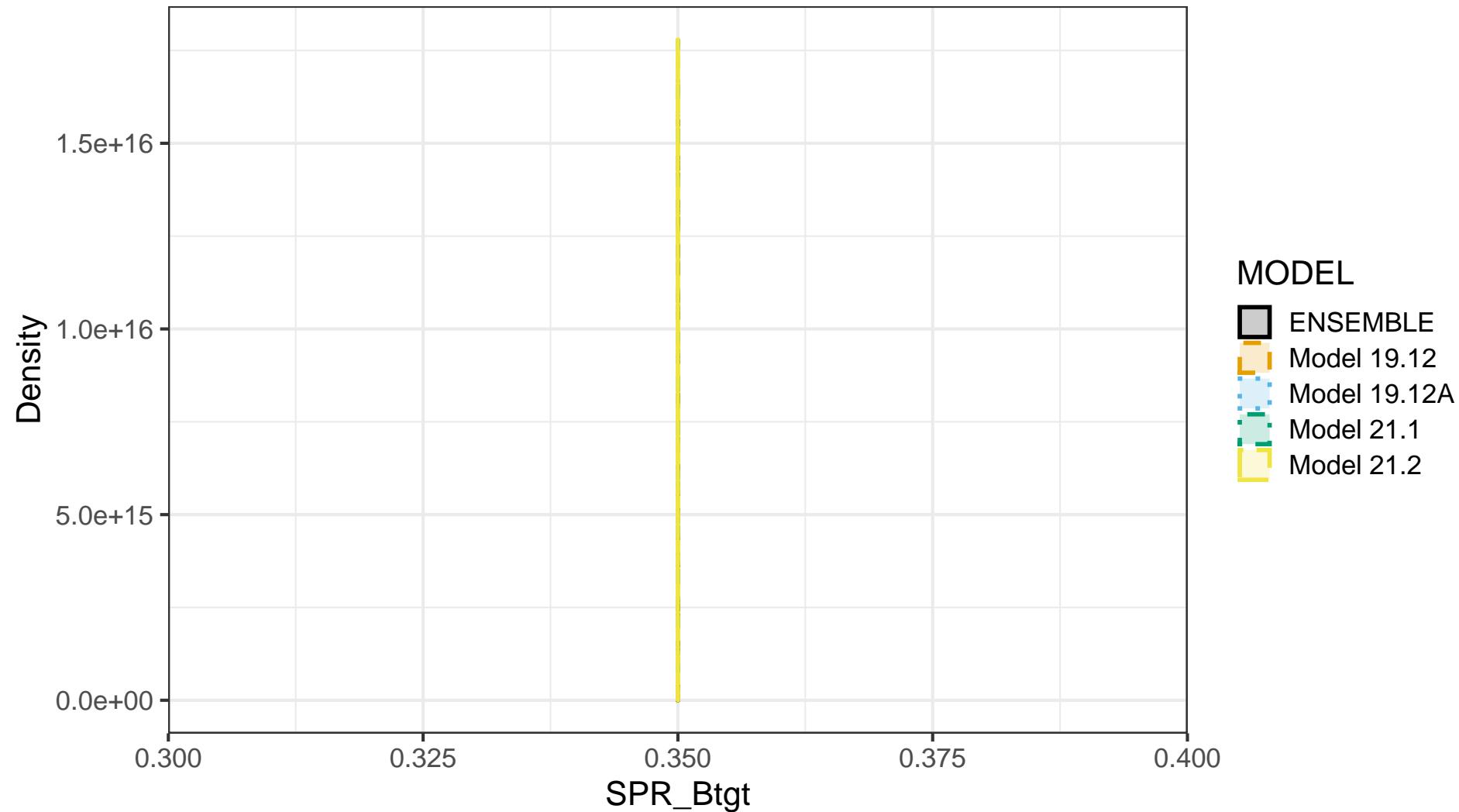
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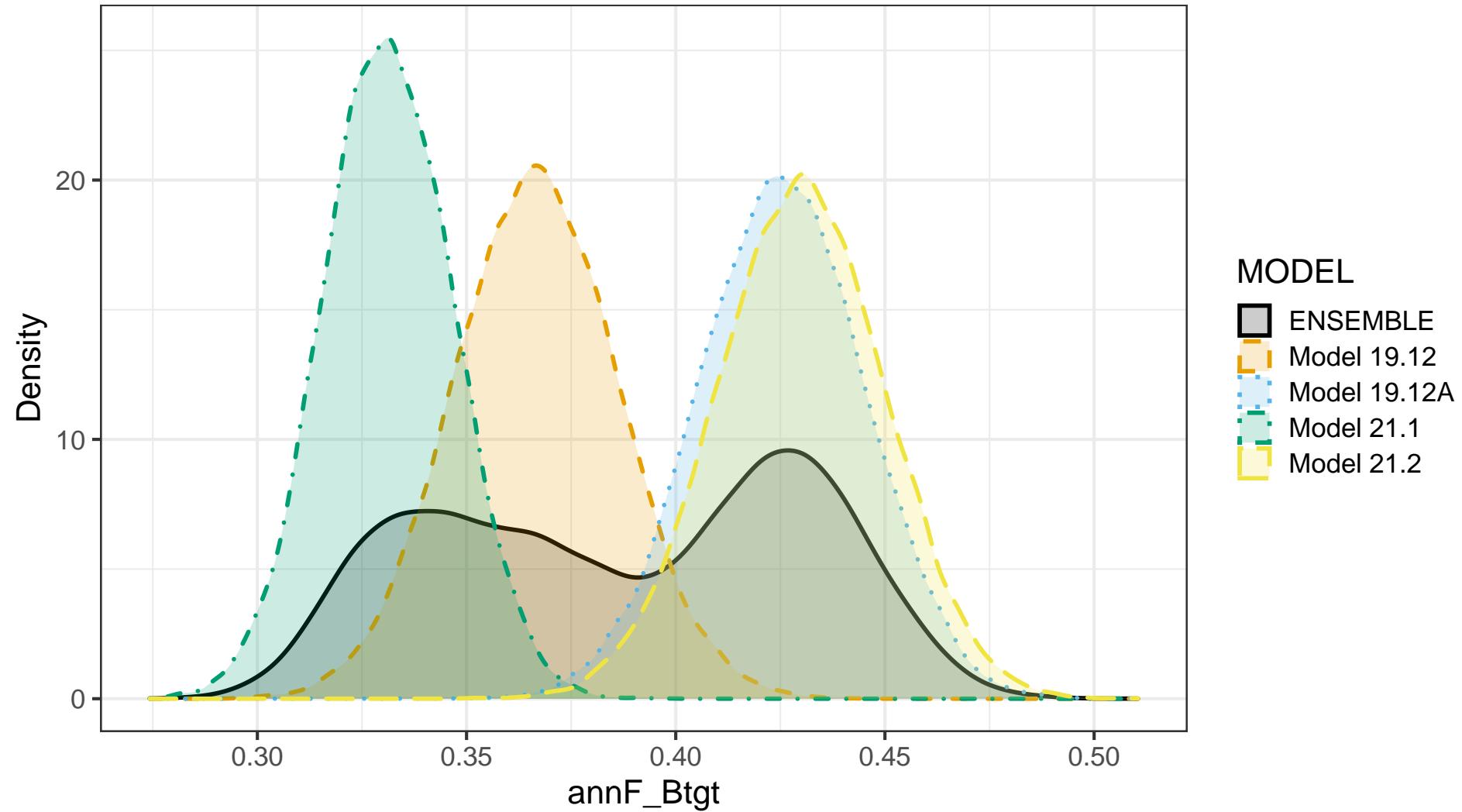
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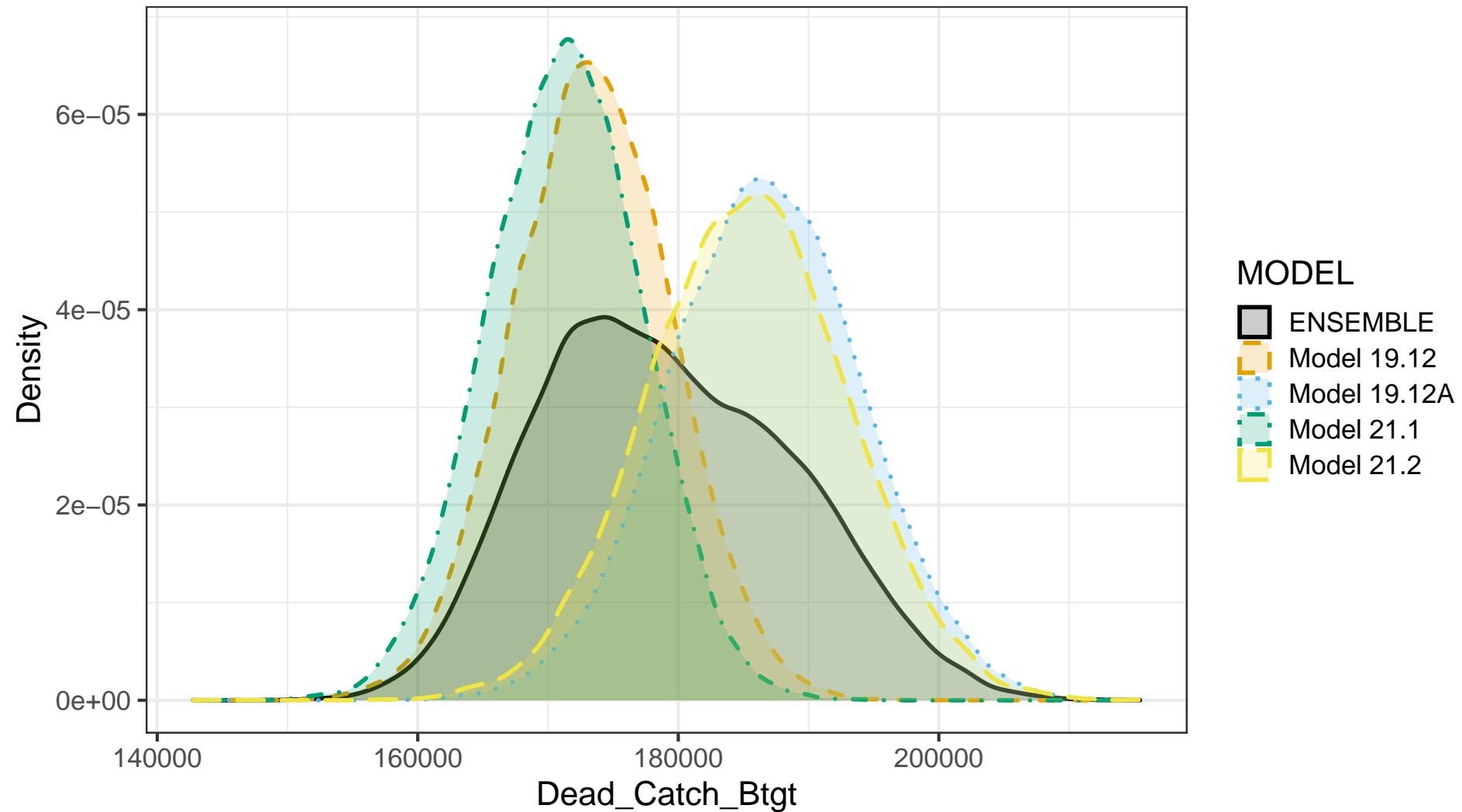
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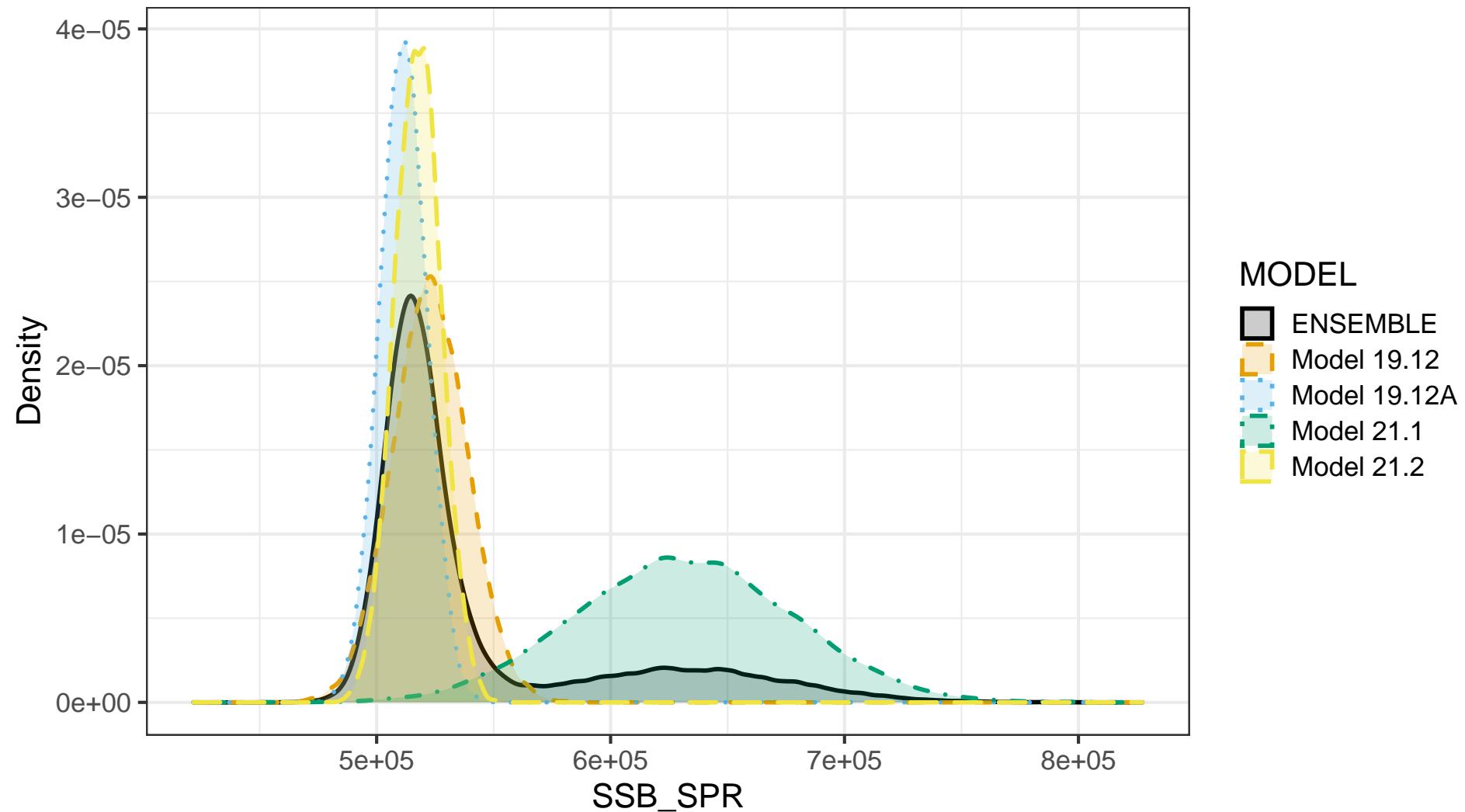
annF_Btgt



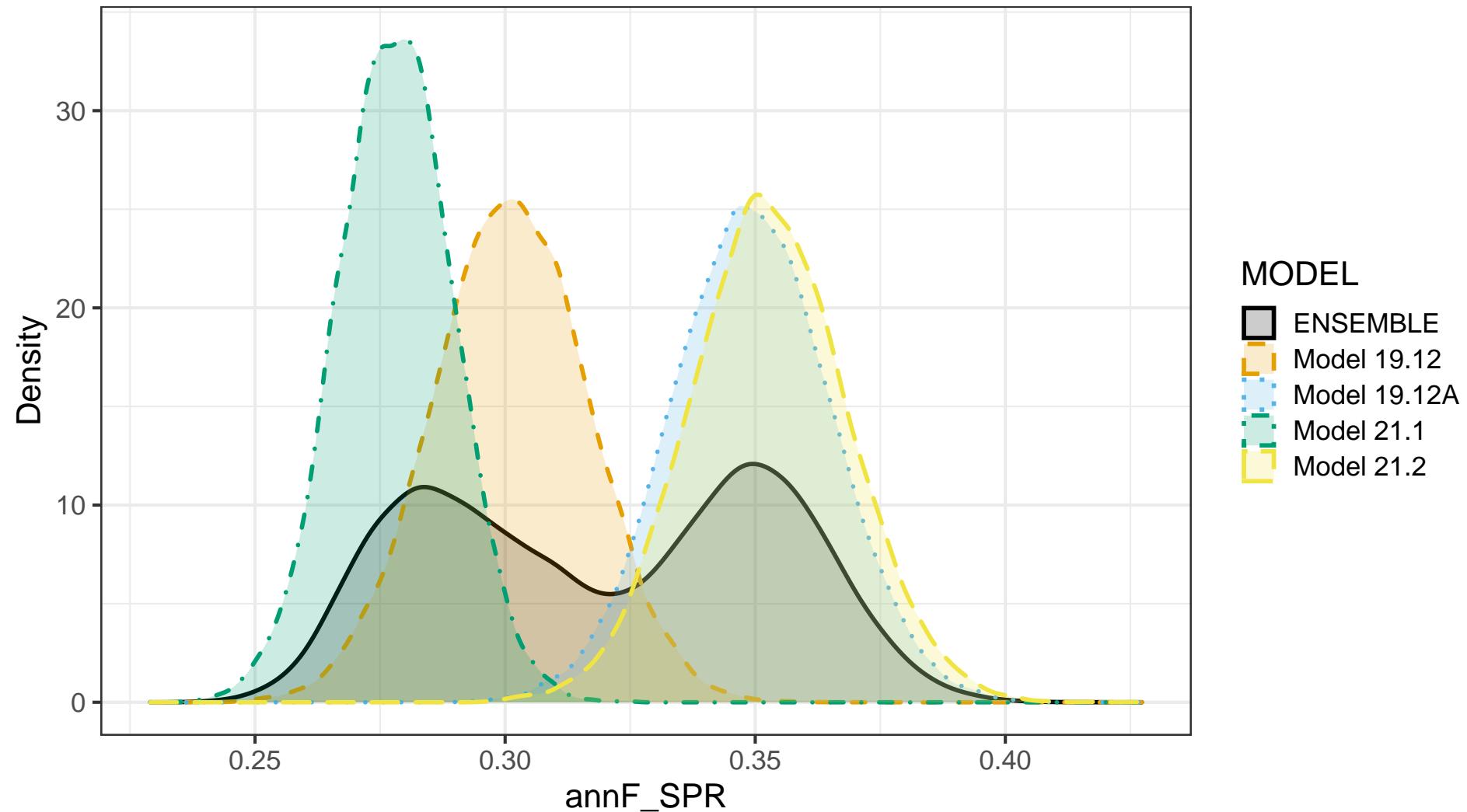
Dead_Catch_Btgt



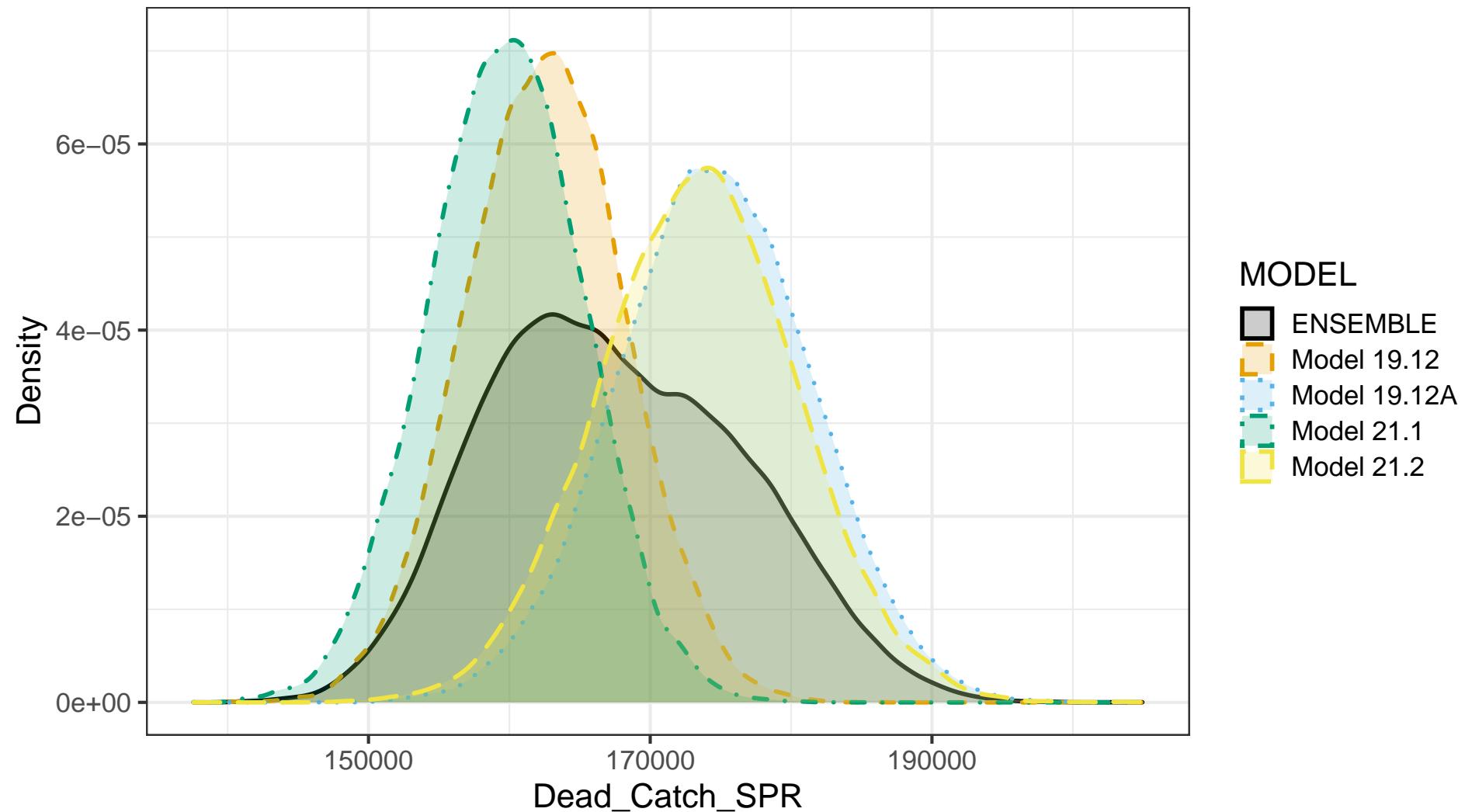
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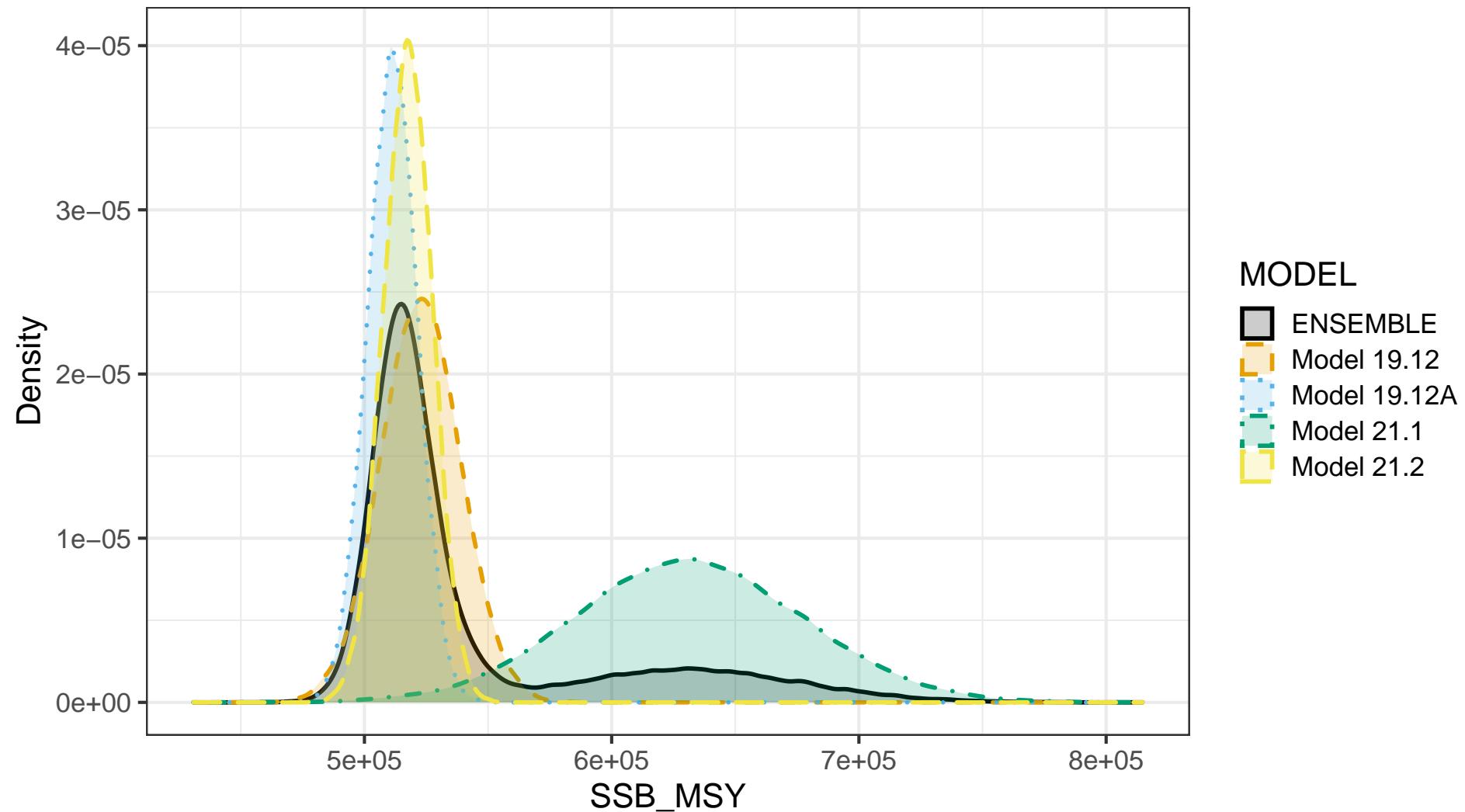
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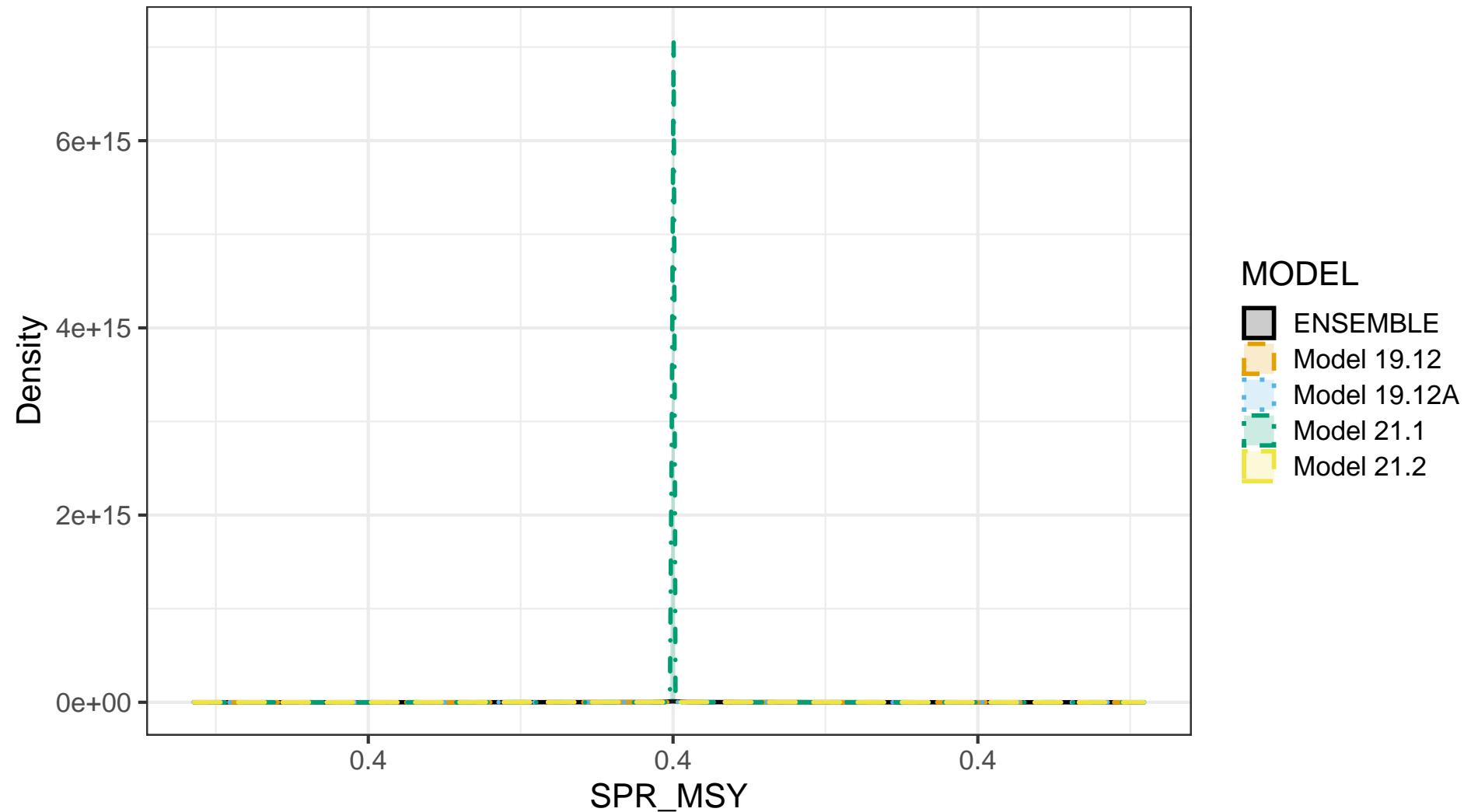
Dead_Catch_SPR



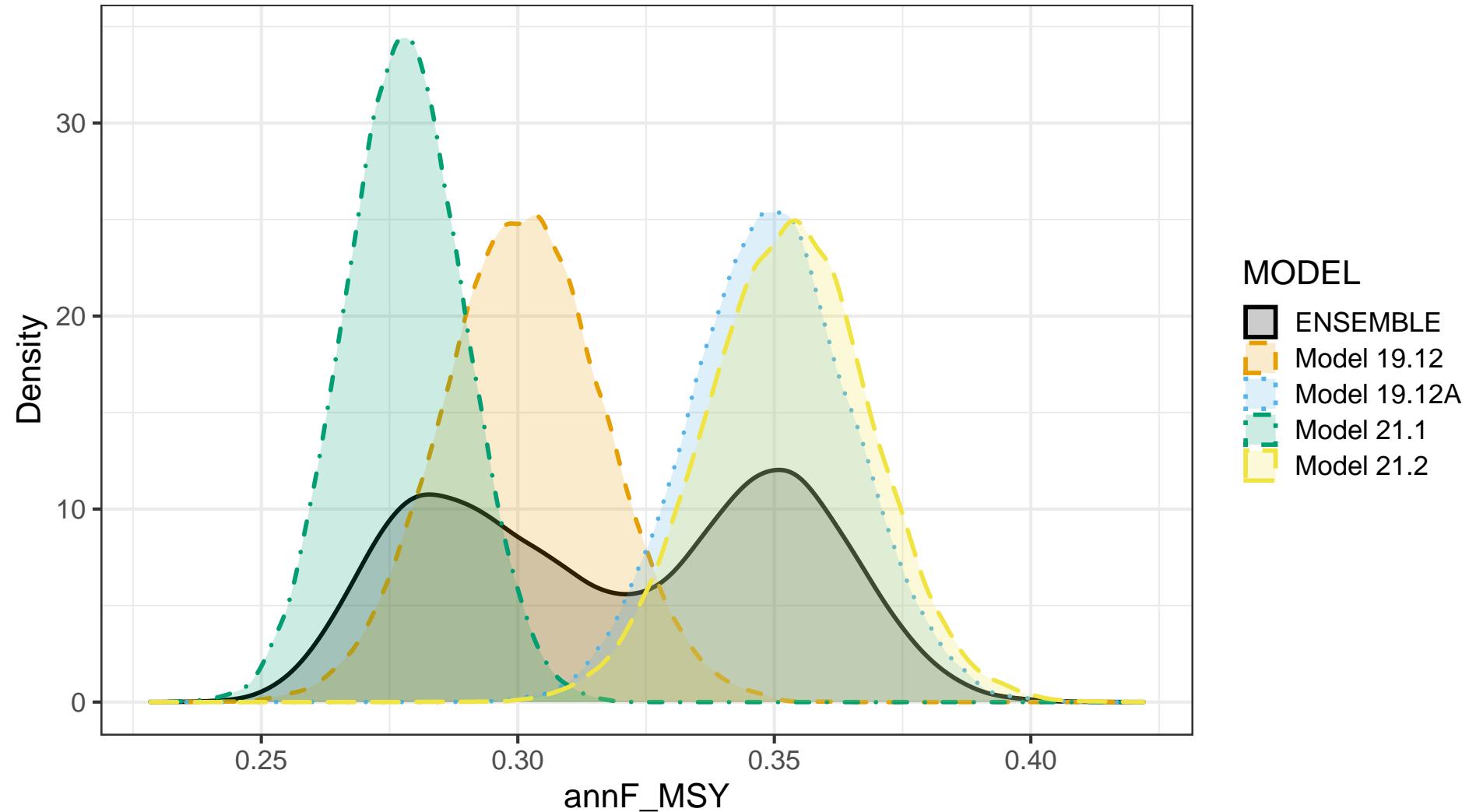
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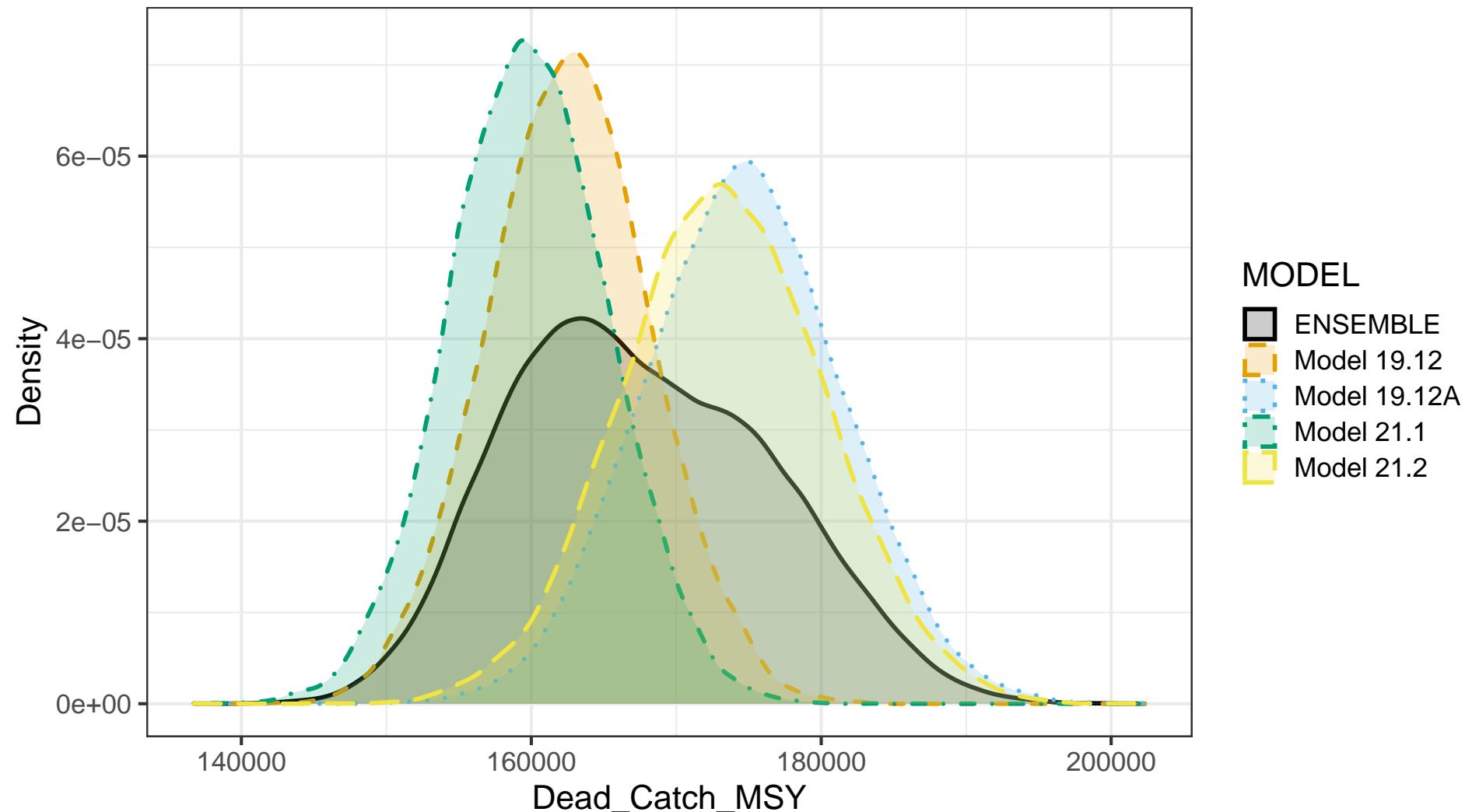
SPR_MSY



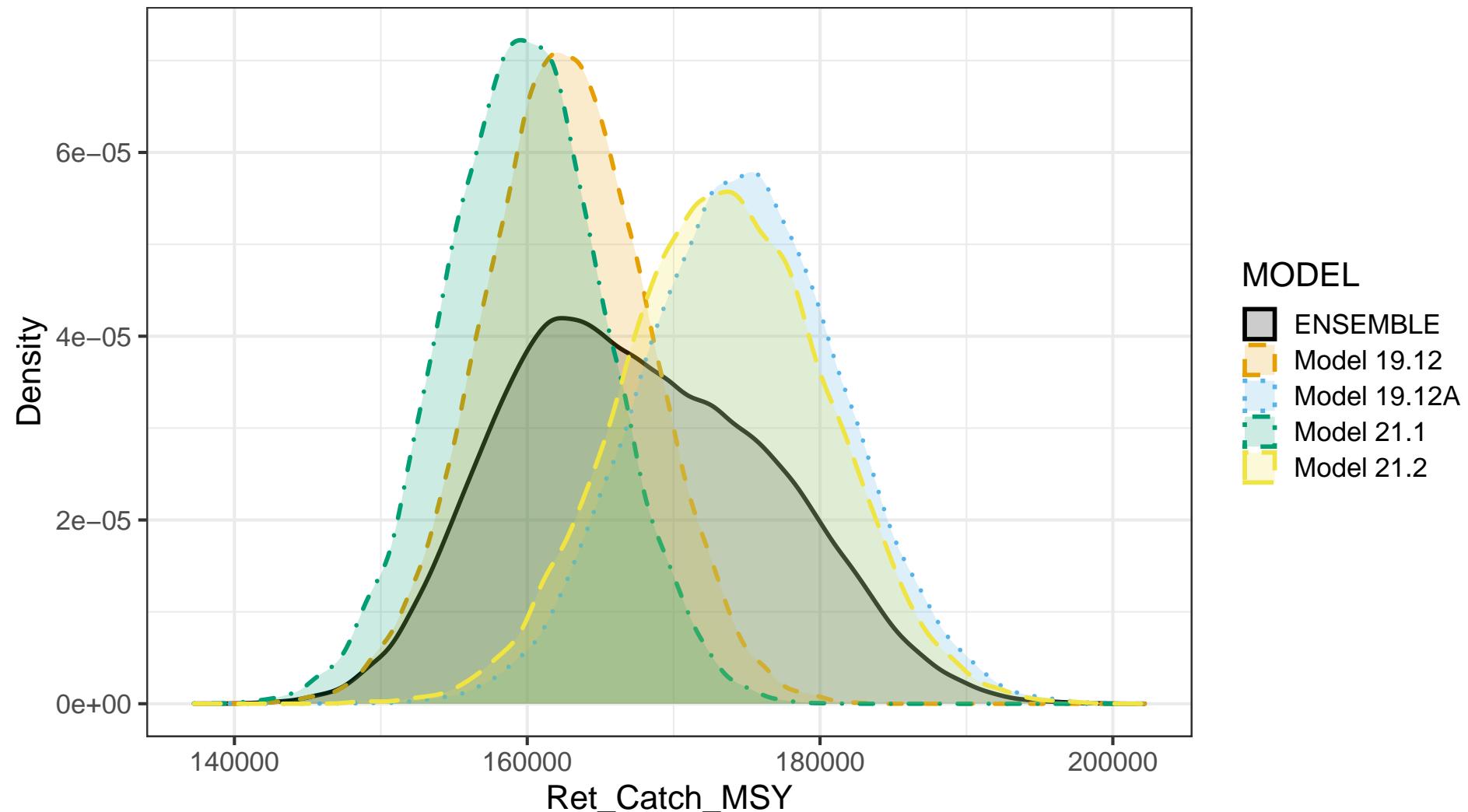
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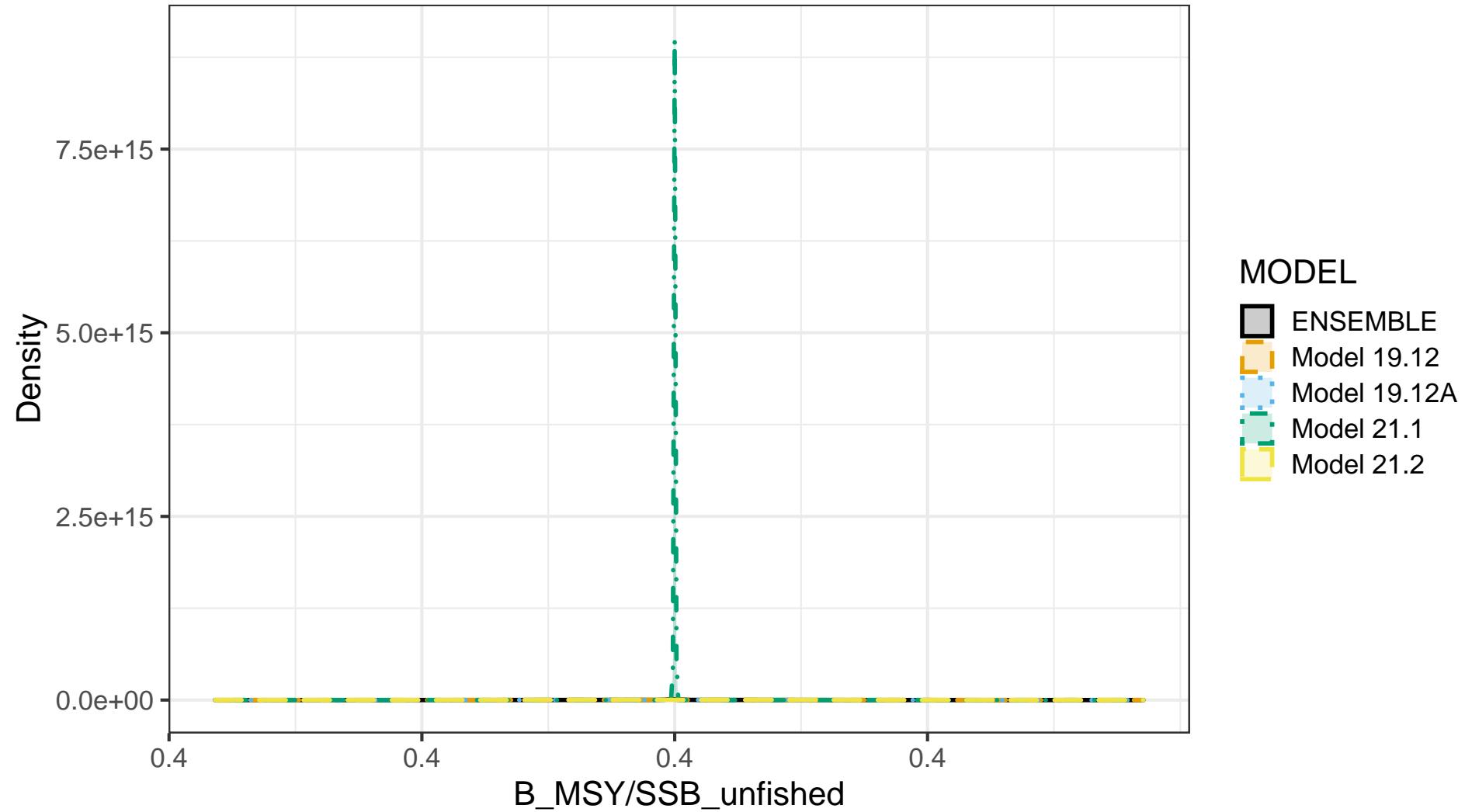
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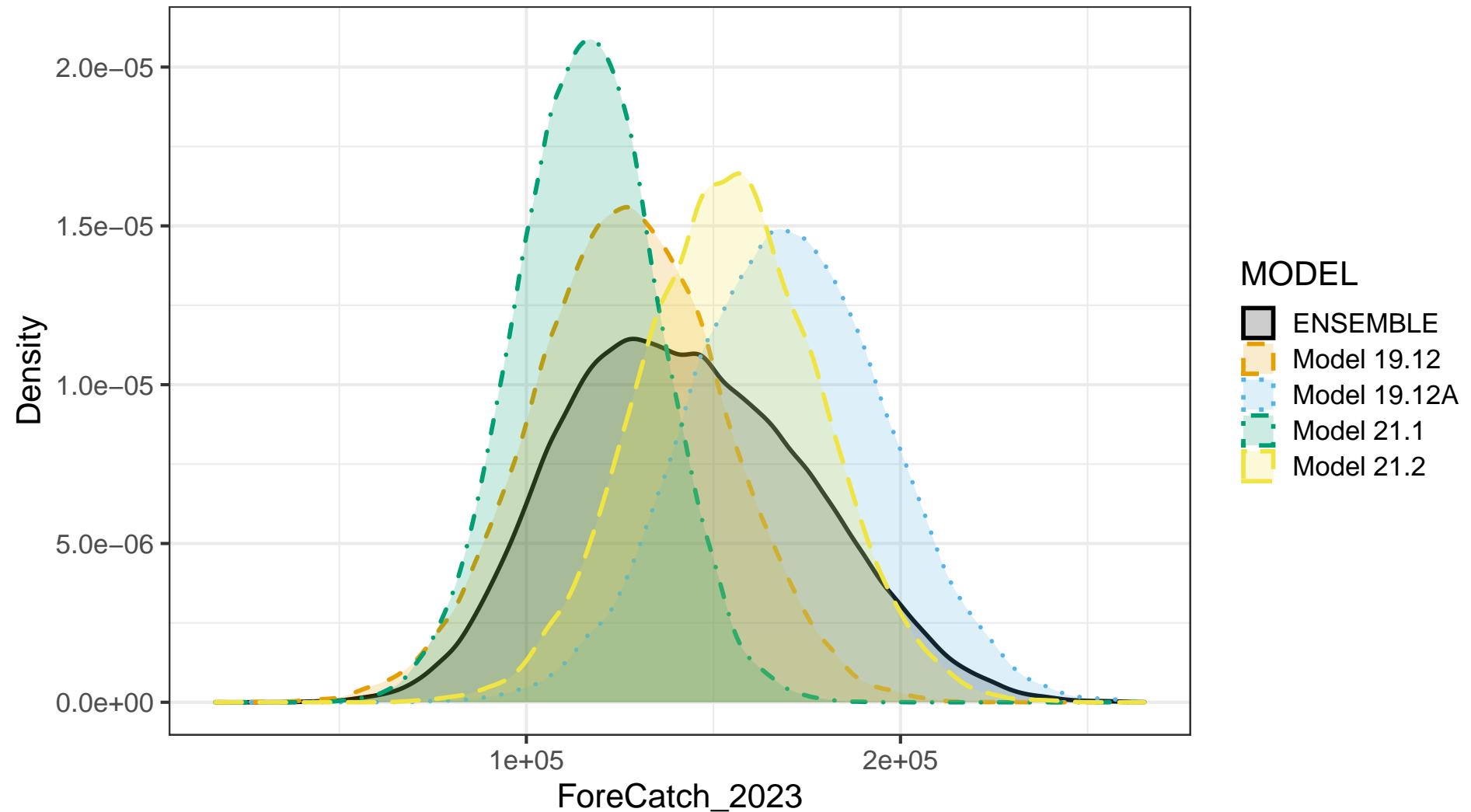
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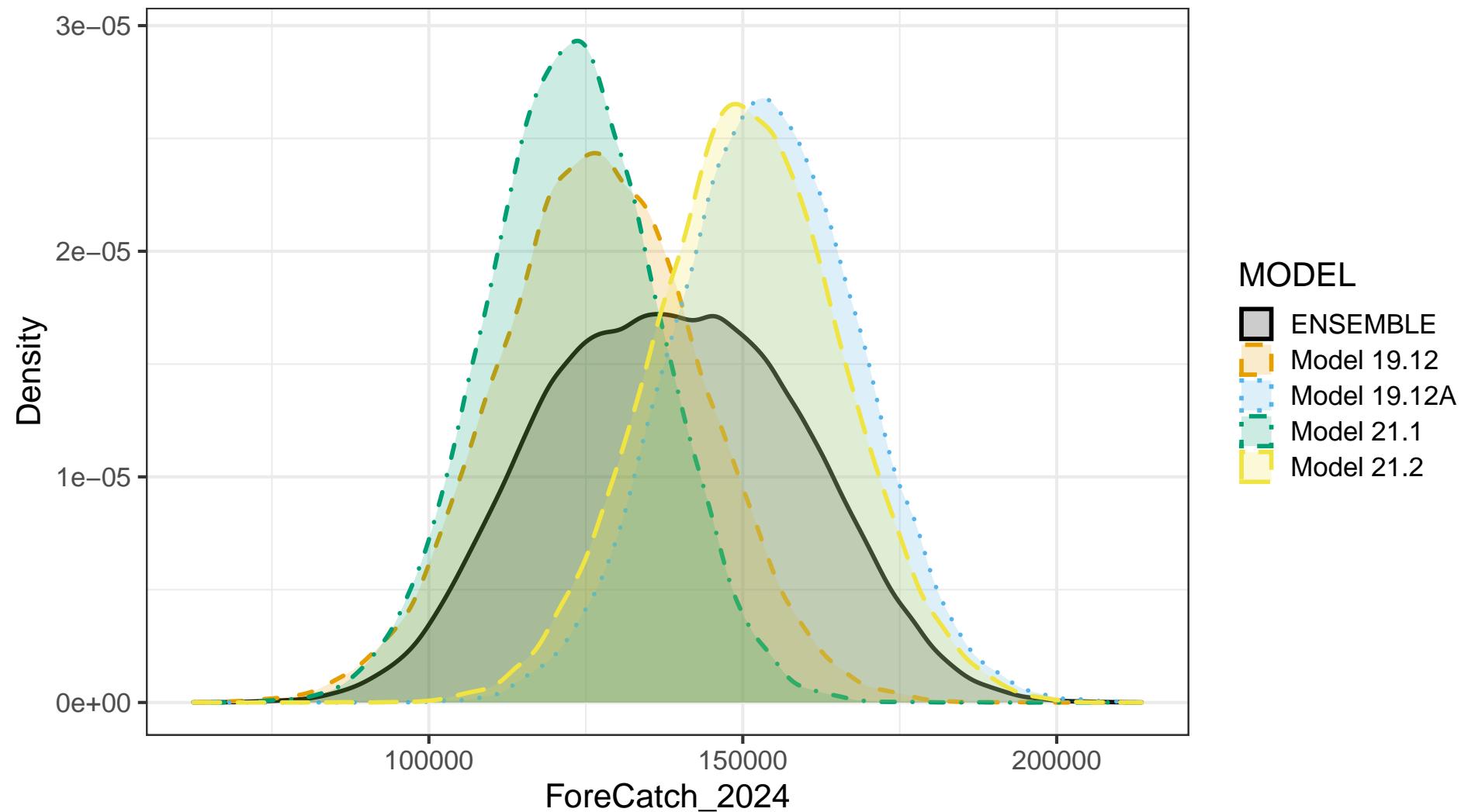
B_MSY/SSB_unfished



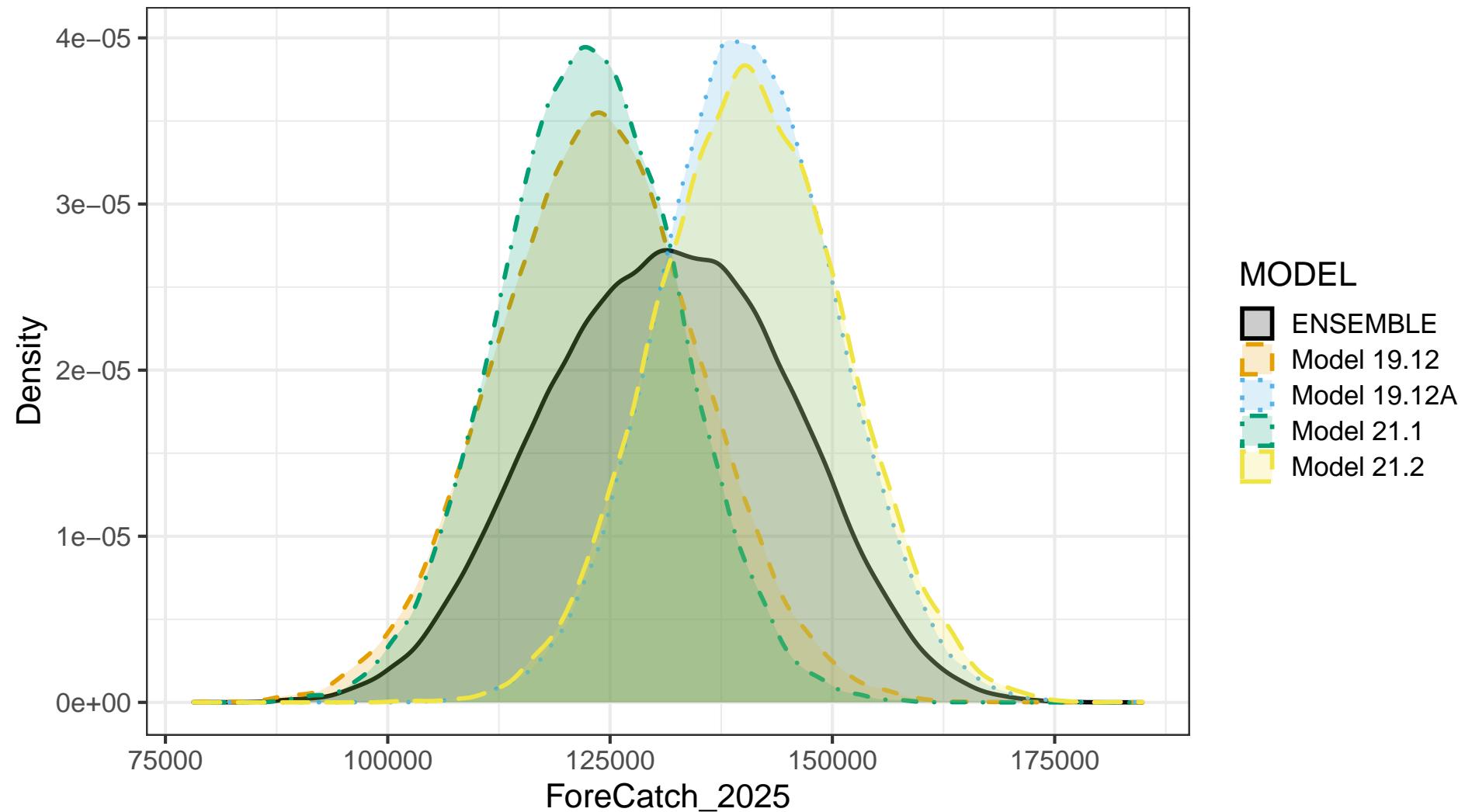
ForeCatch_2023



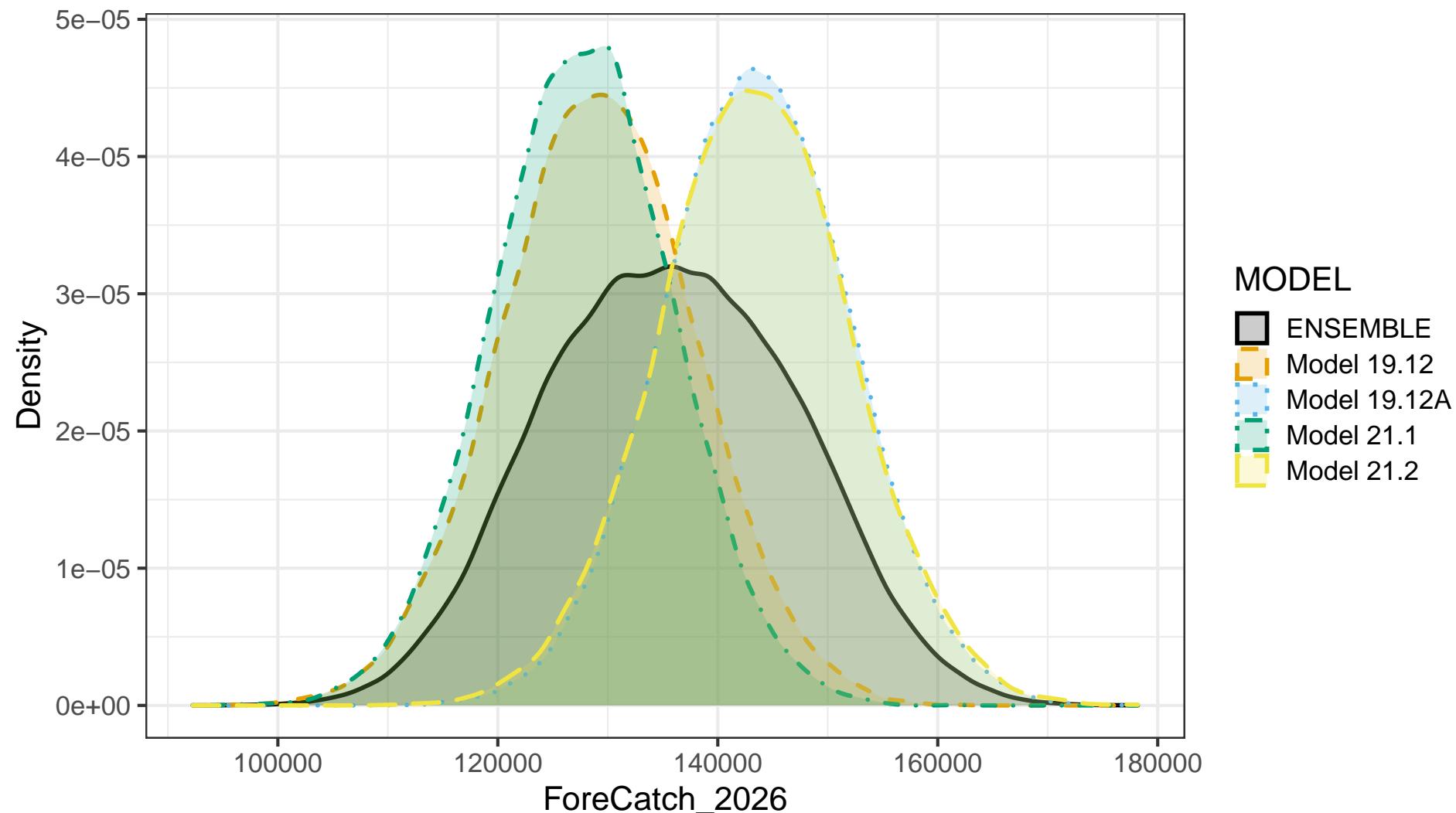
ForeCatch_2024



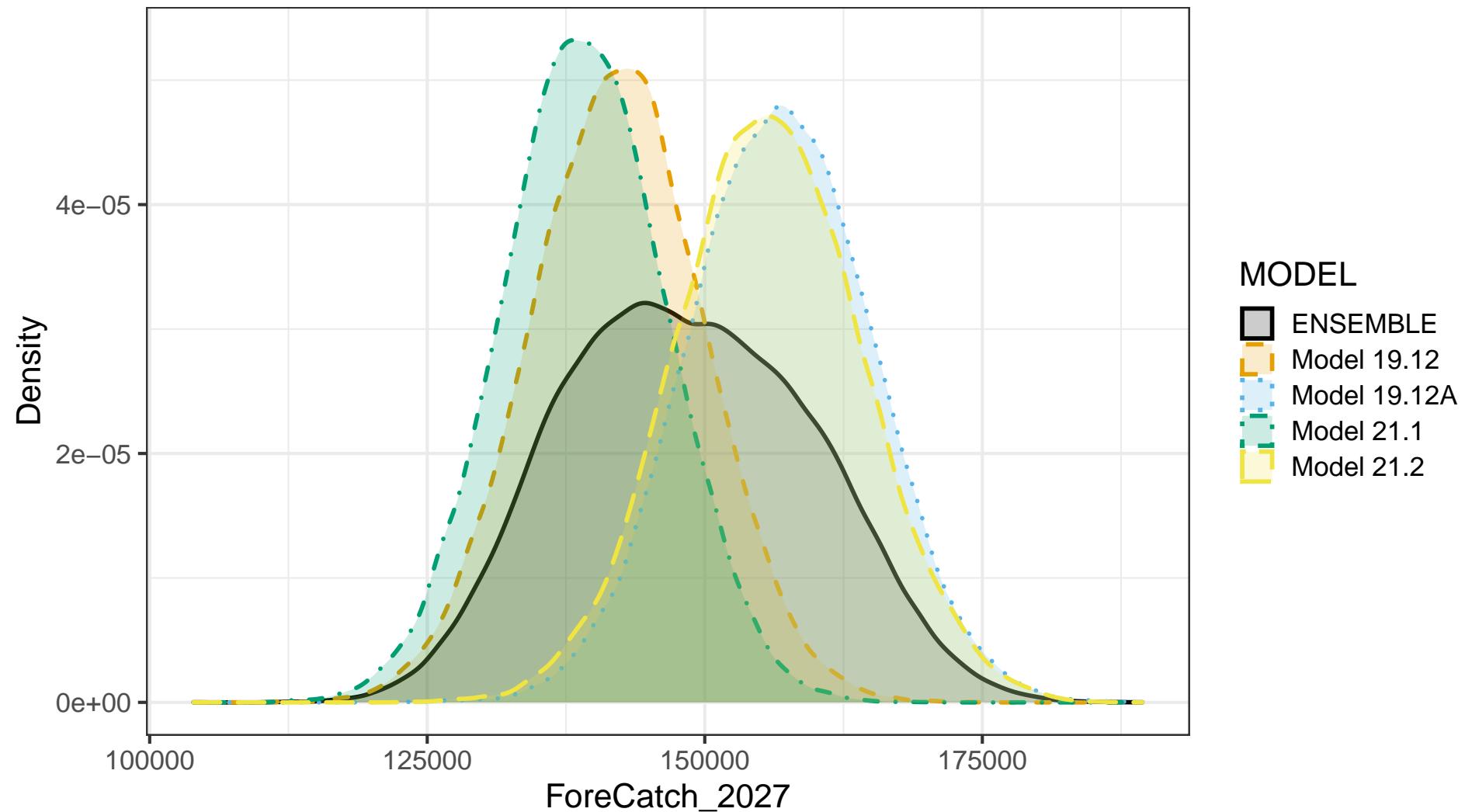
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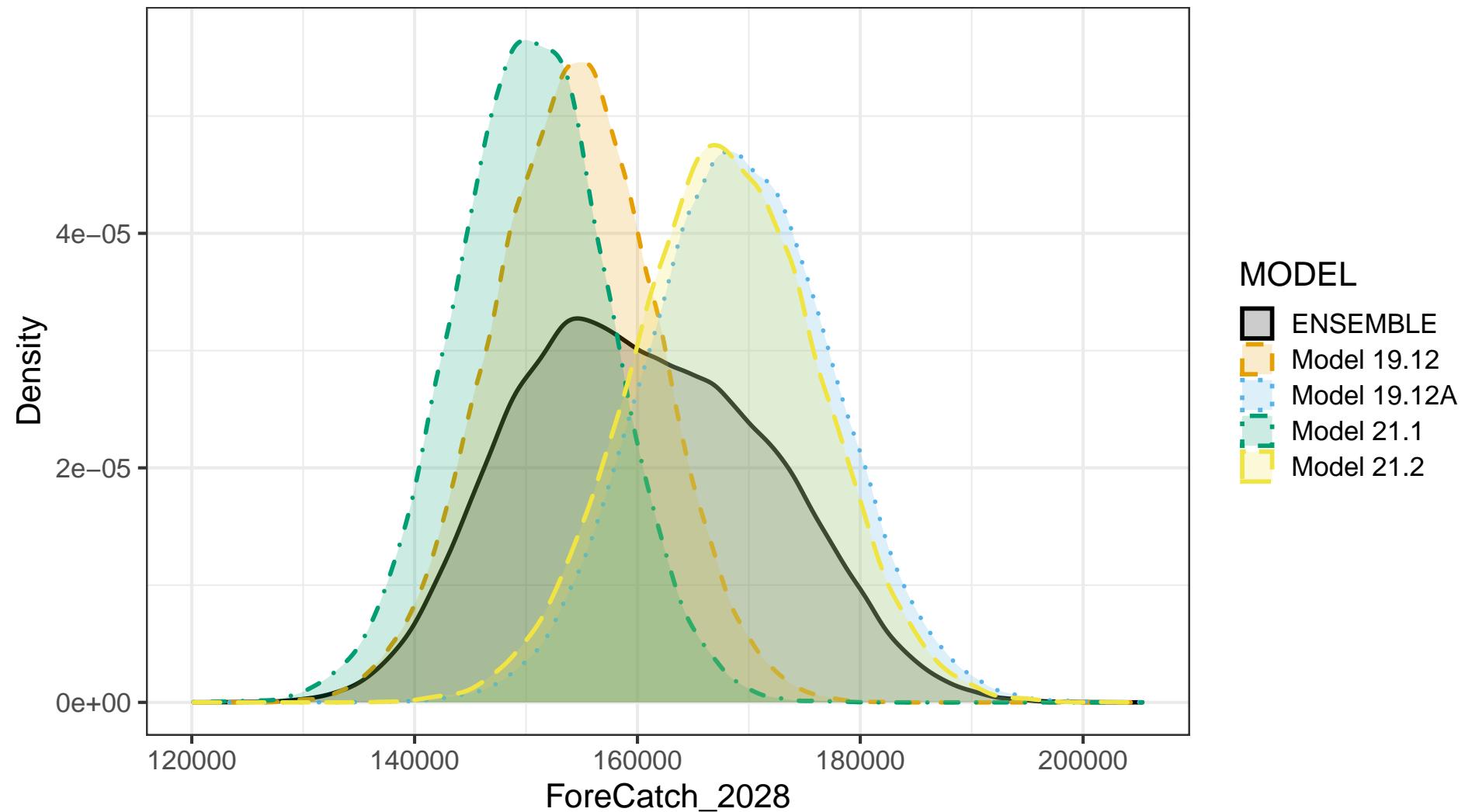
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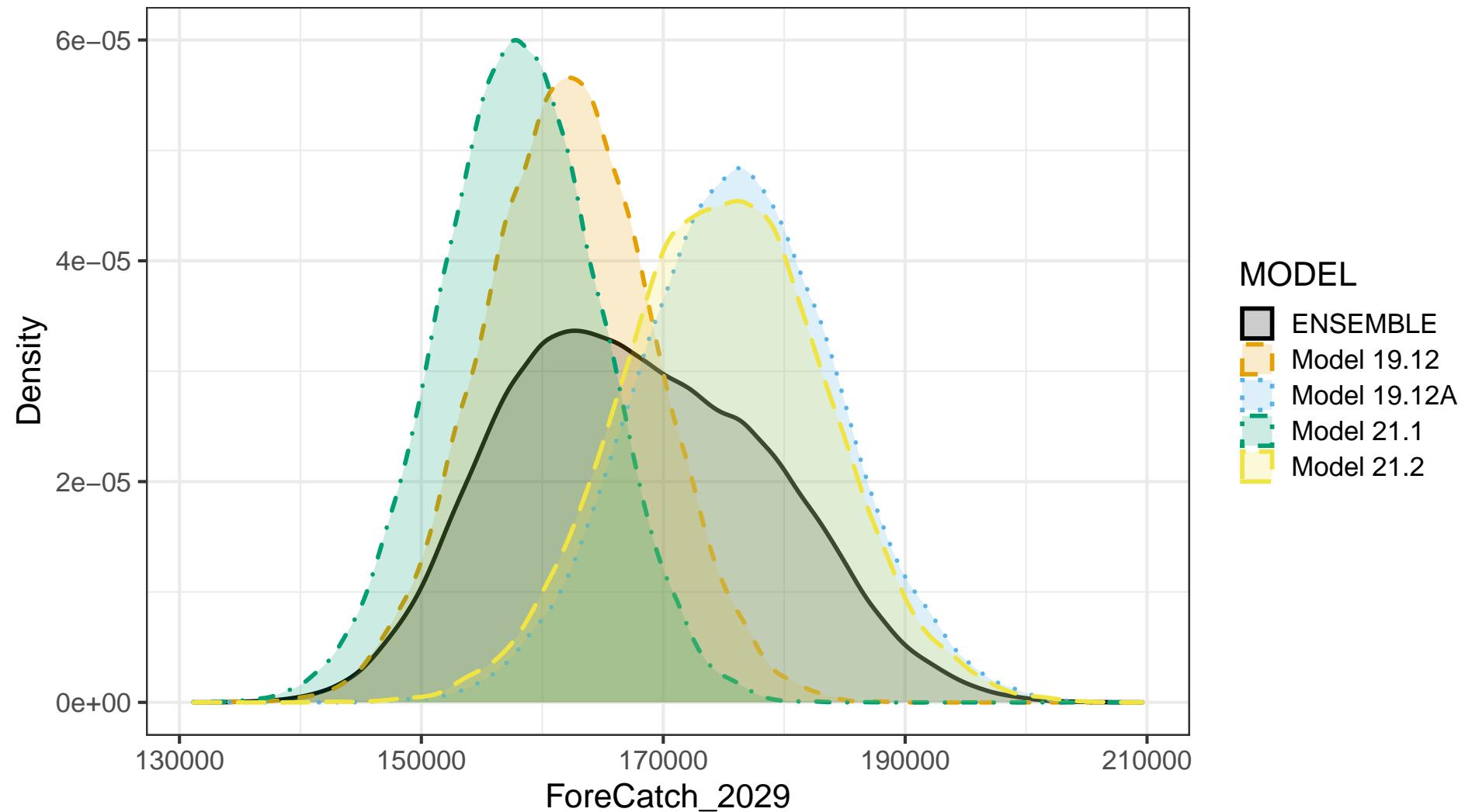
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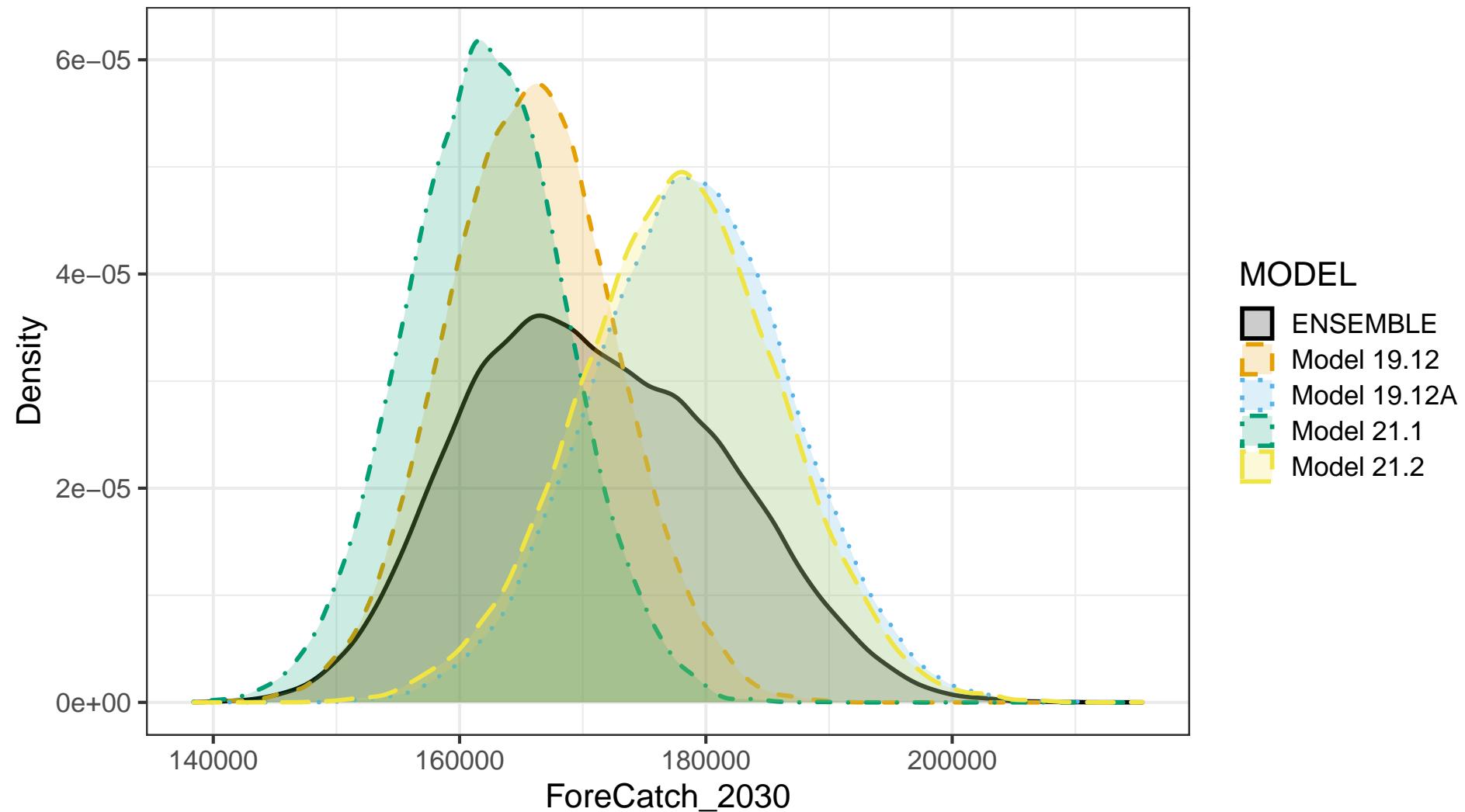
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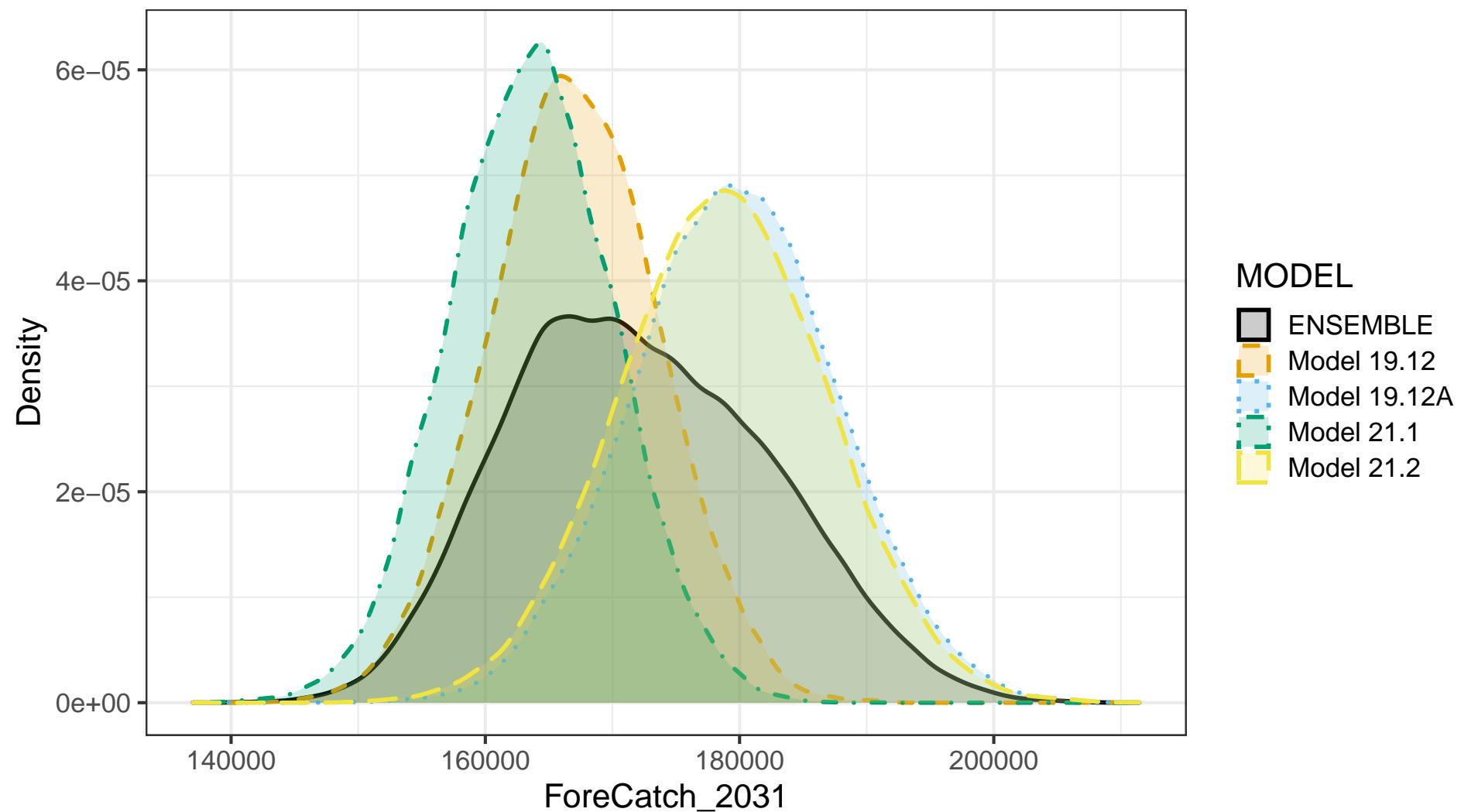
ForeCatch_2029



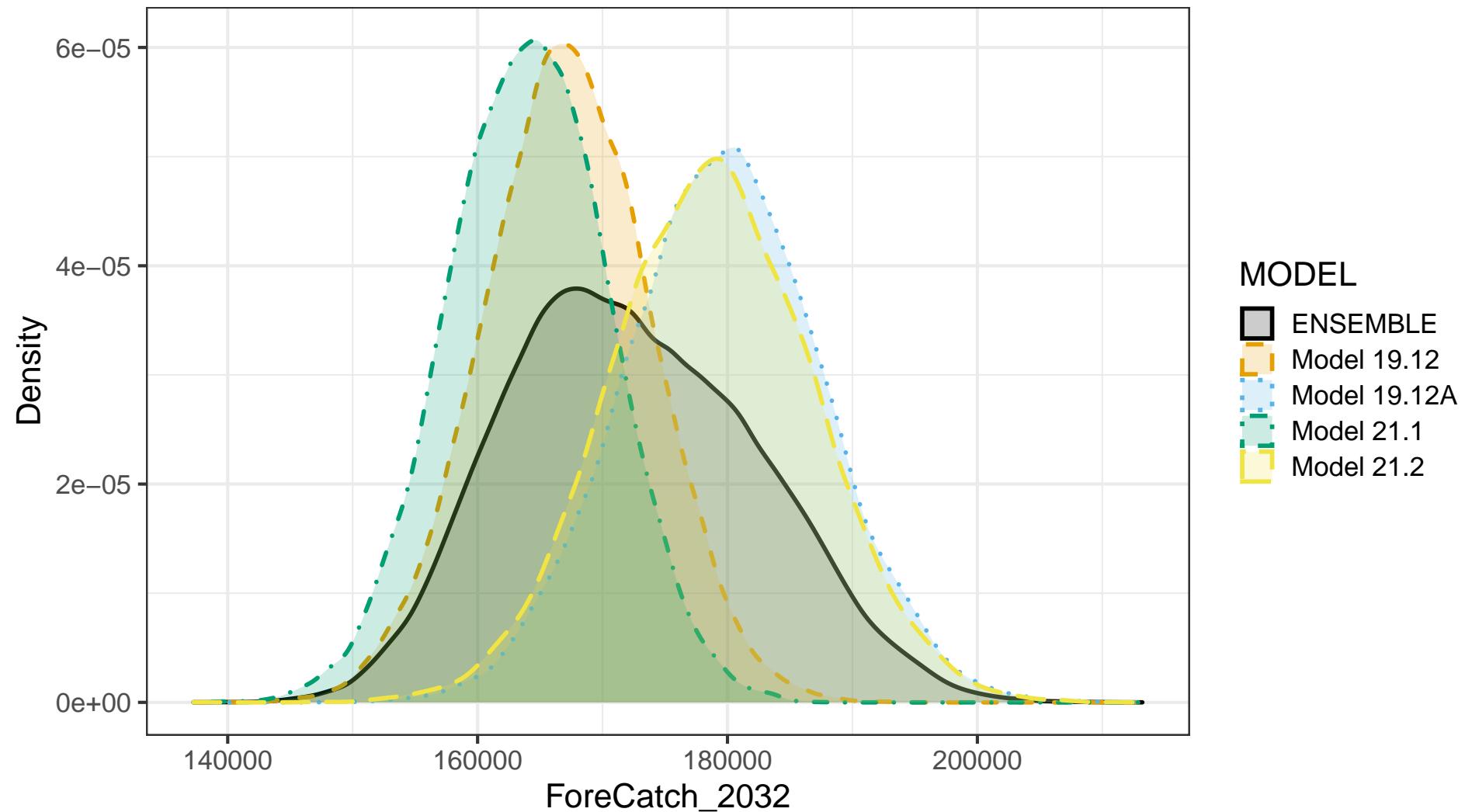
ForeCatch_2030



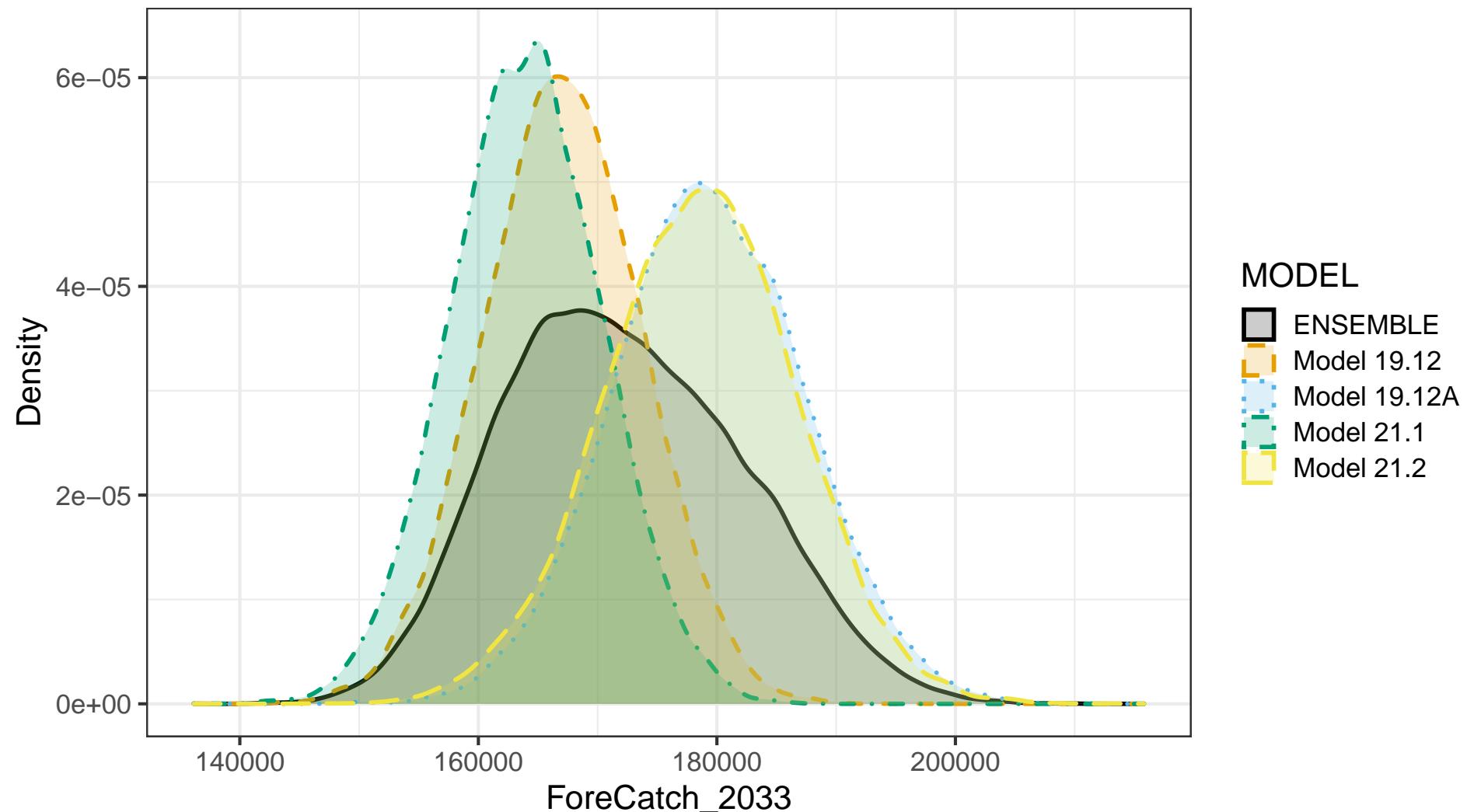
ForeCatch_2031



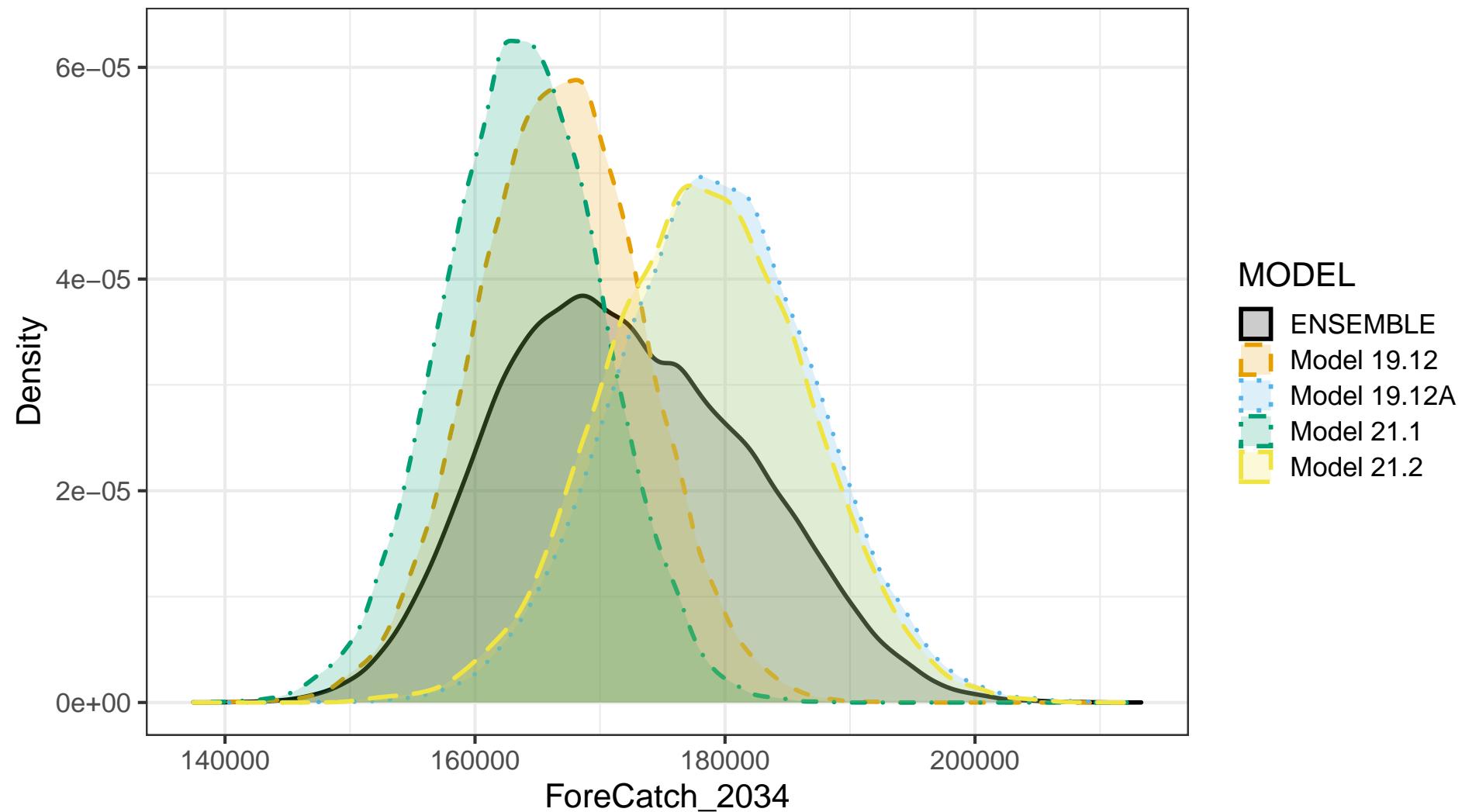
ForeCatch_2032



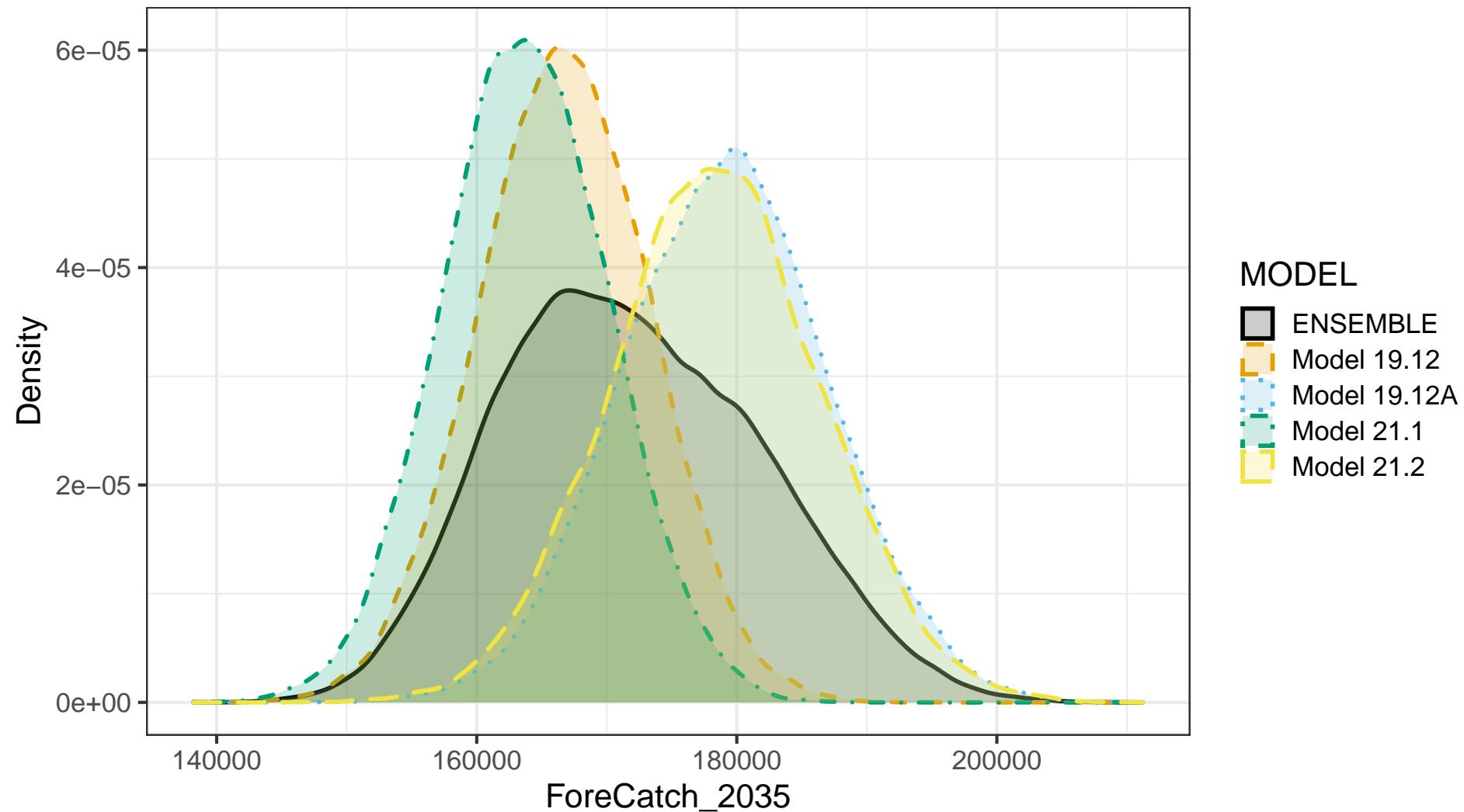
ForeCatch_2033



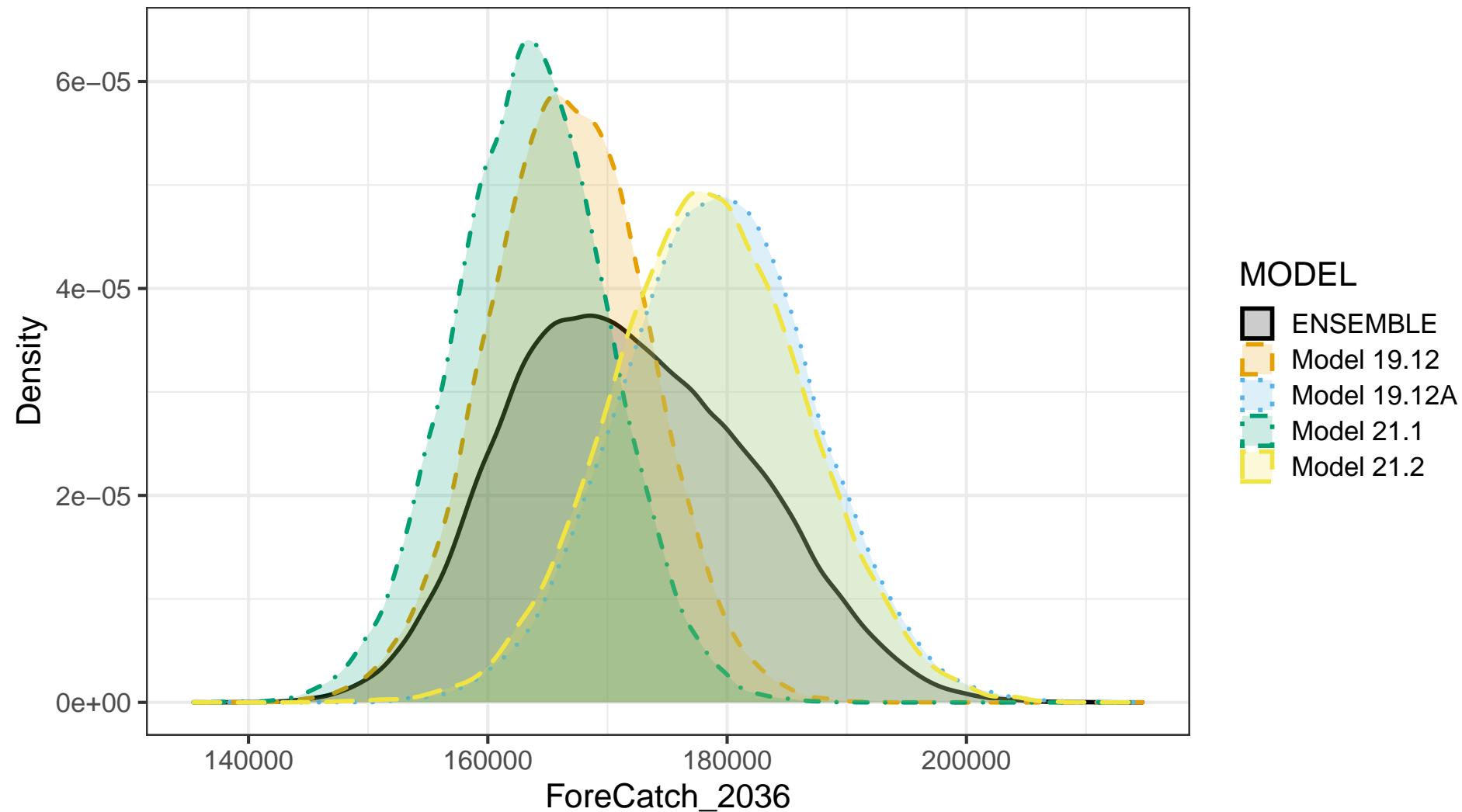
ForeCatch_2034



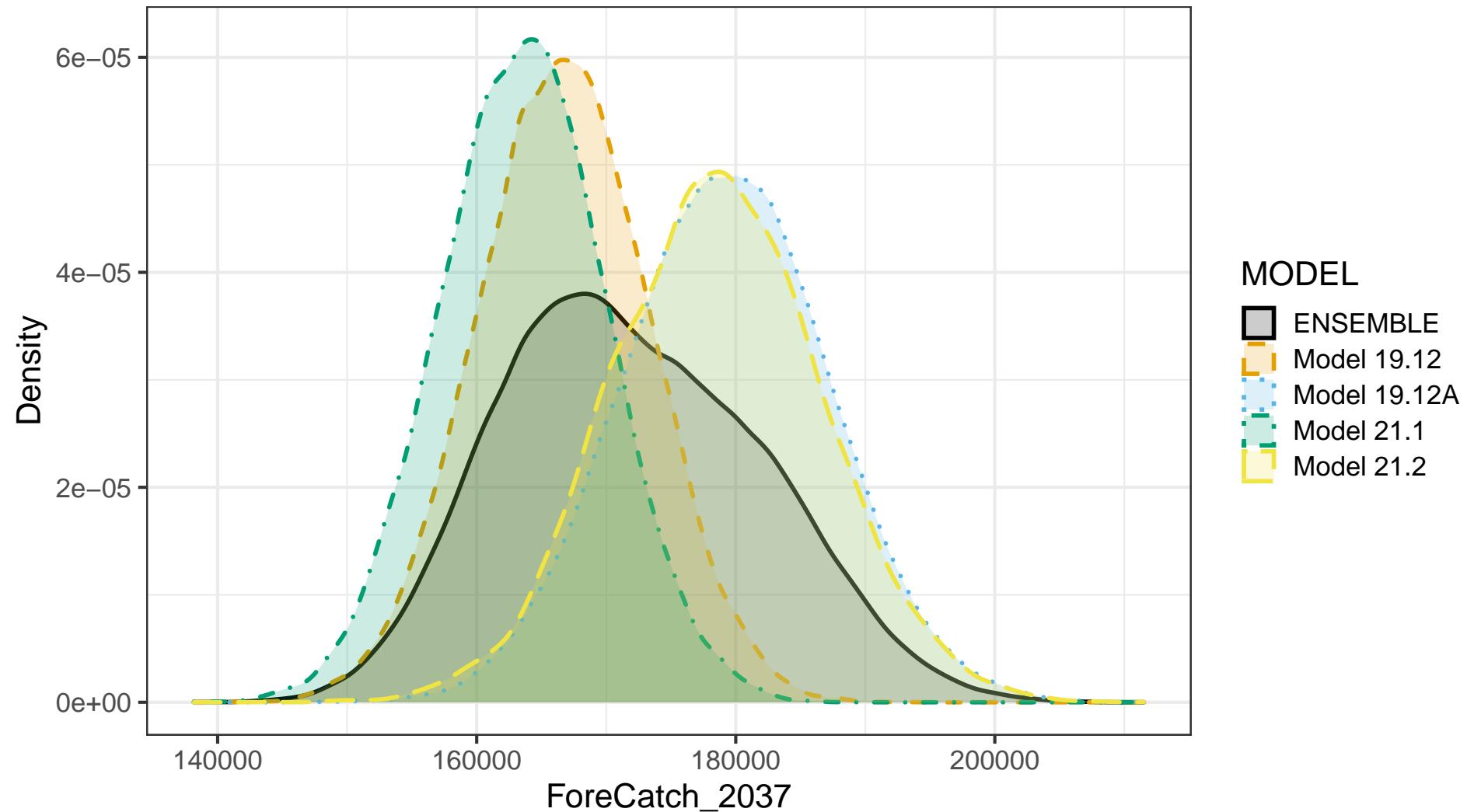
ForeCatch_2035



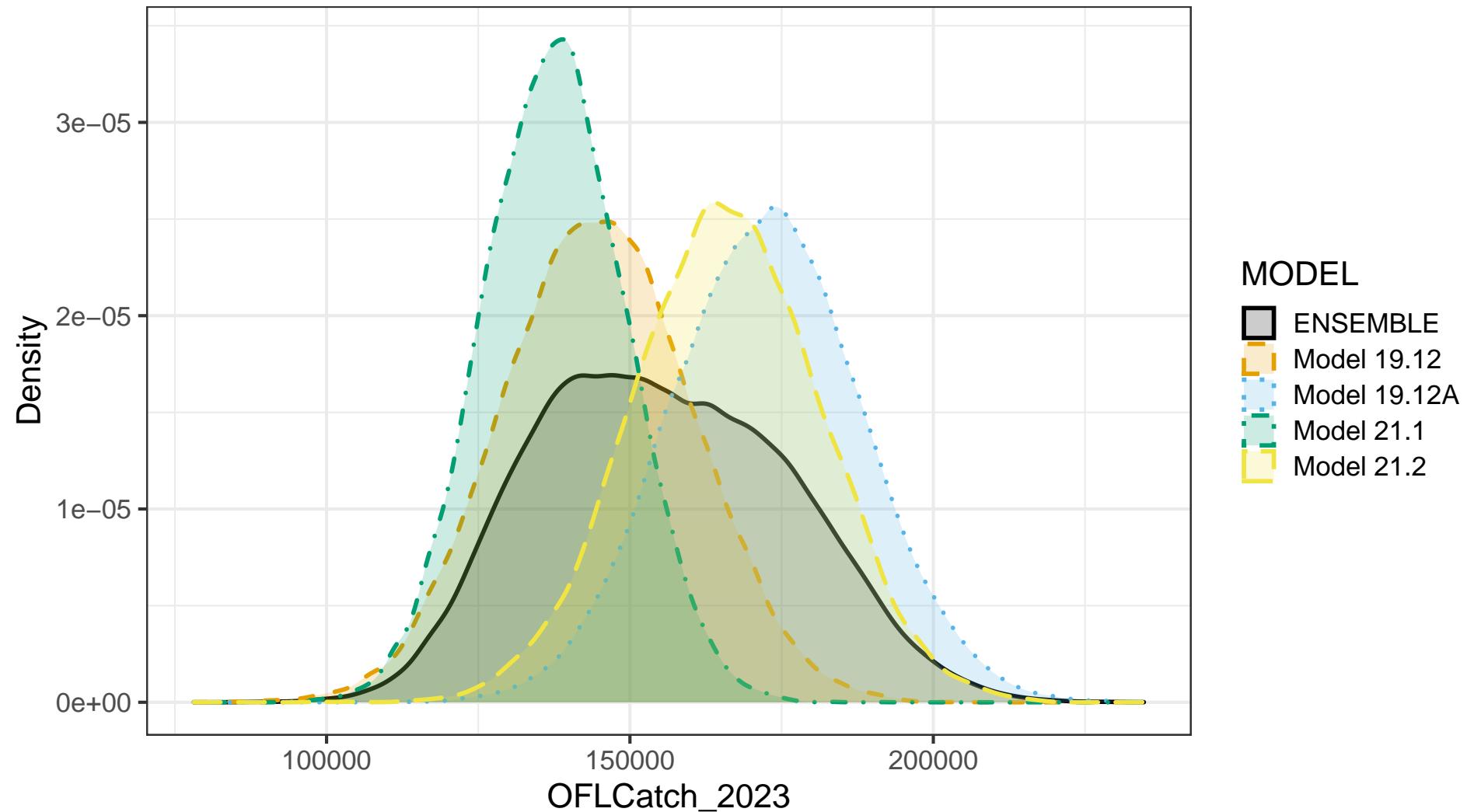
ForeCatch_2036



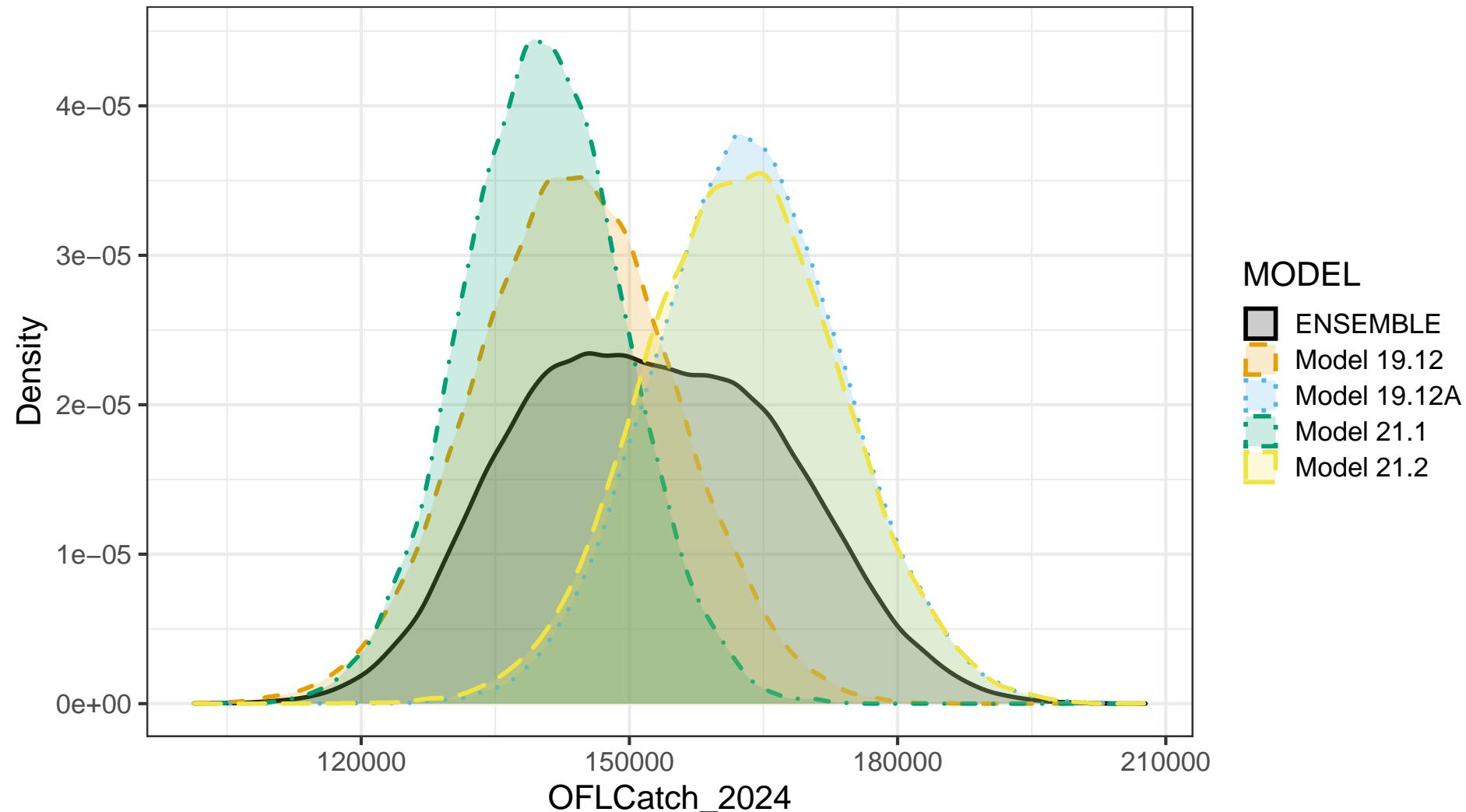
ForeCatch_2037



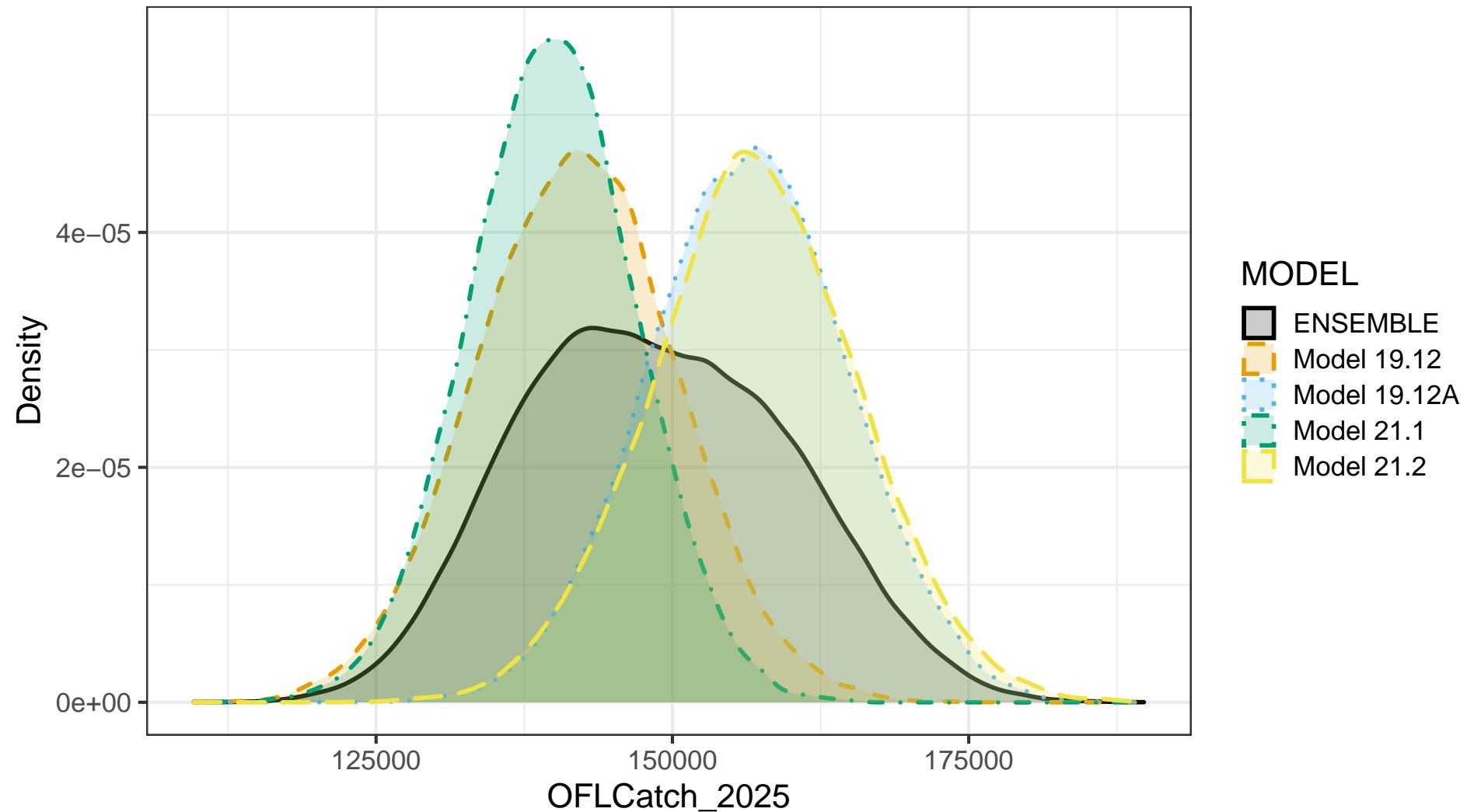
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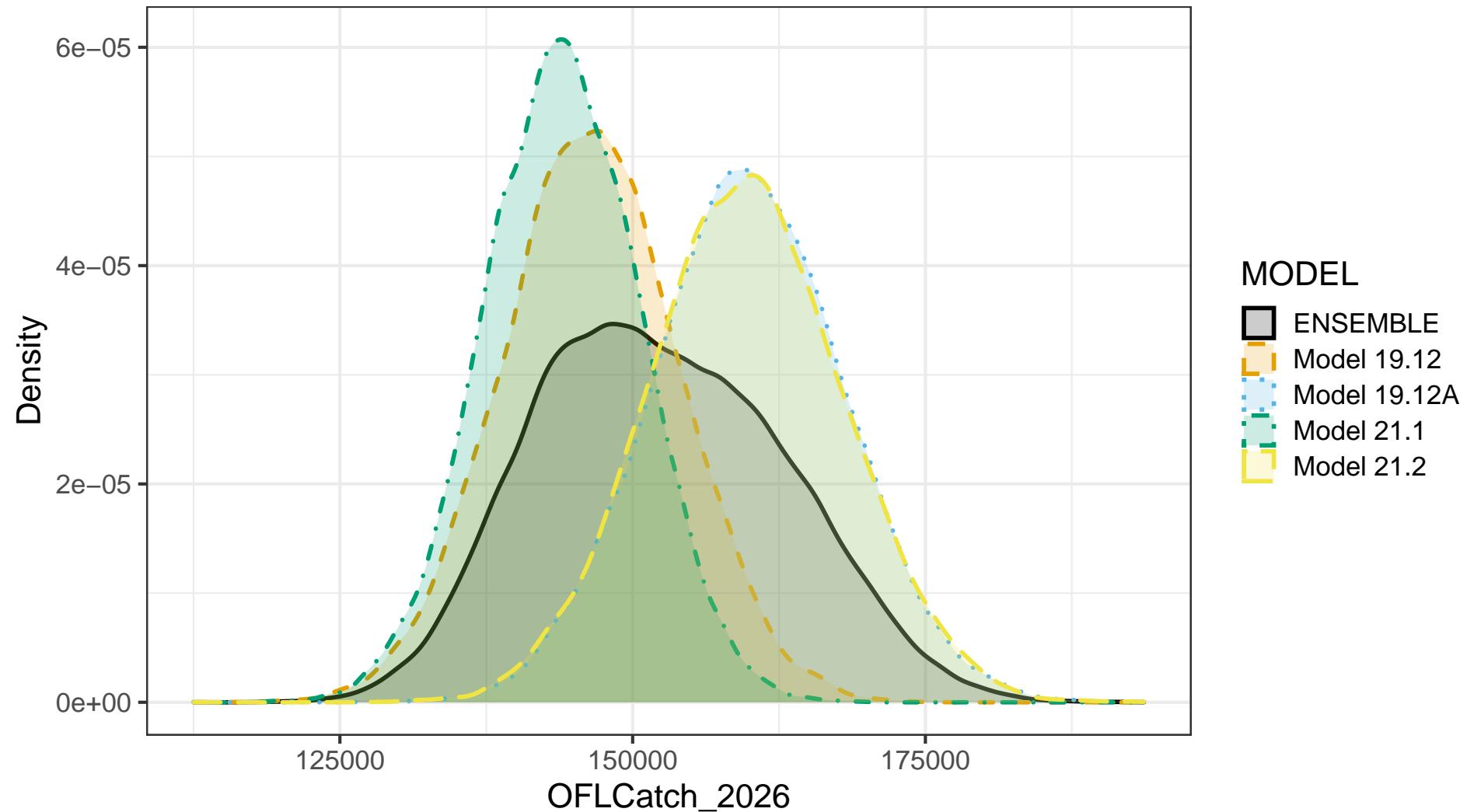
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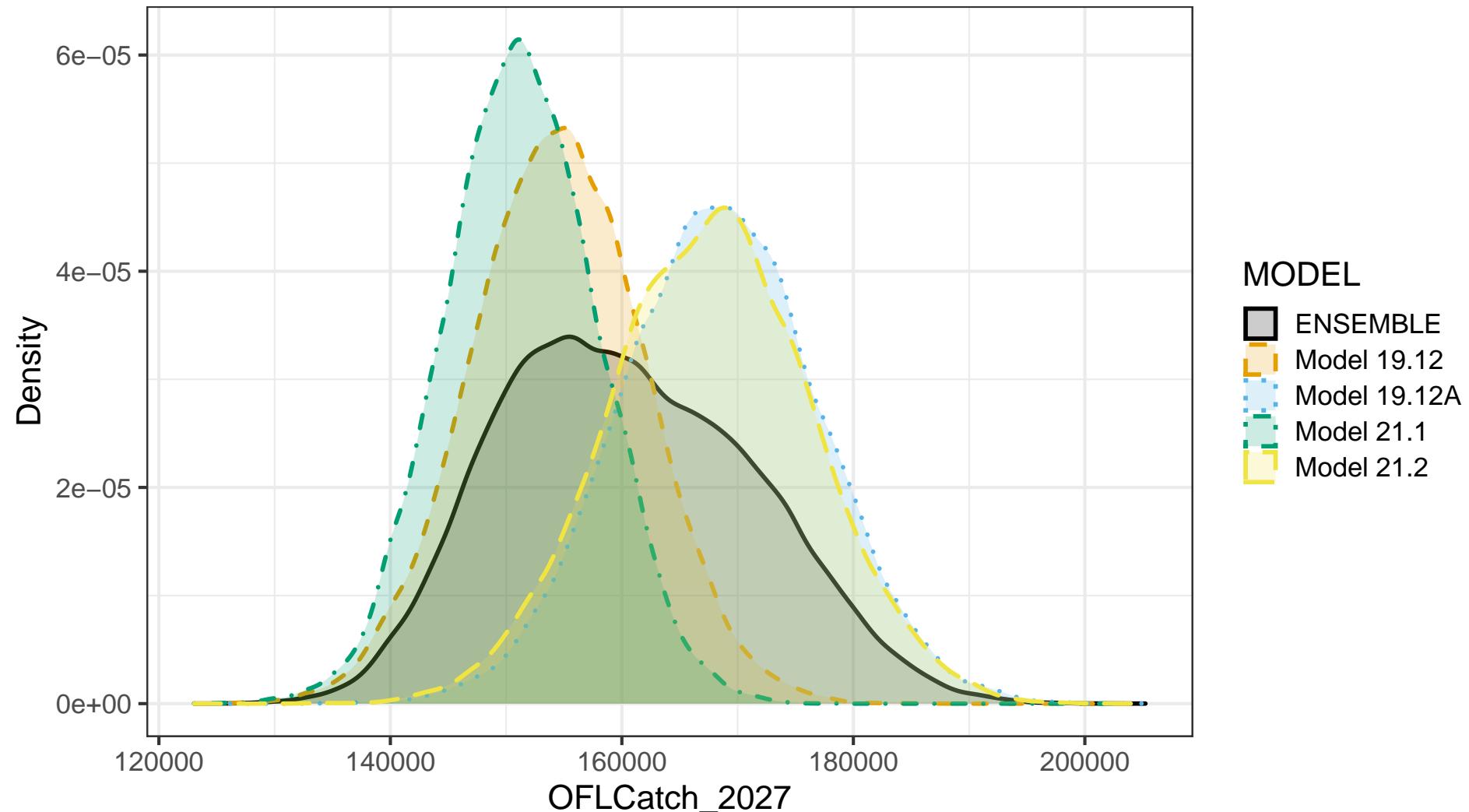
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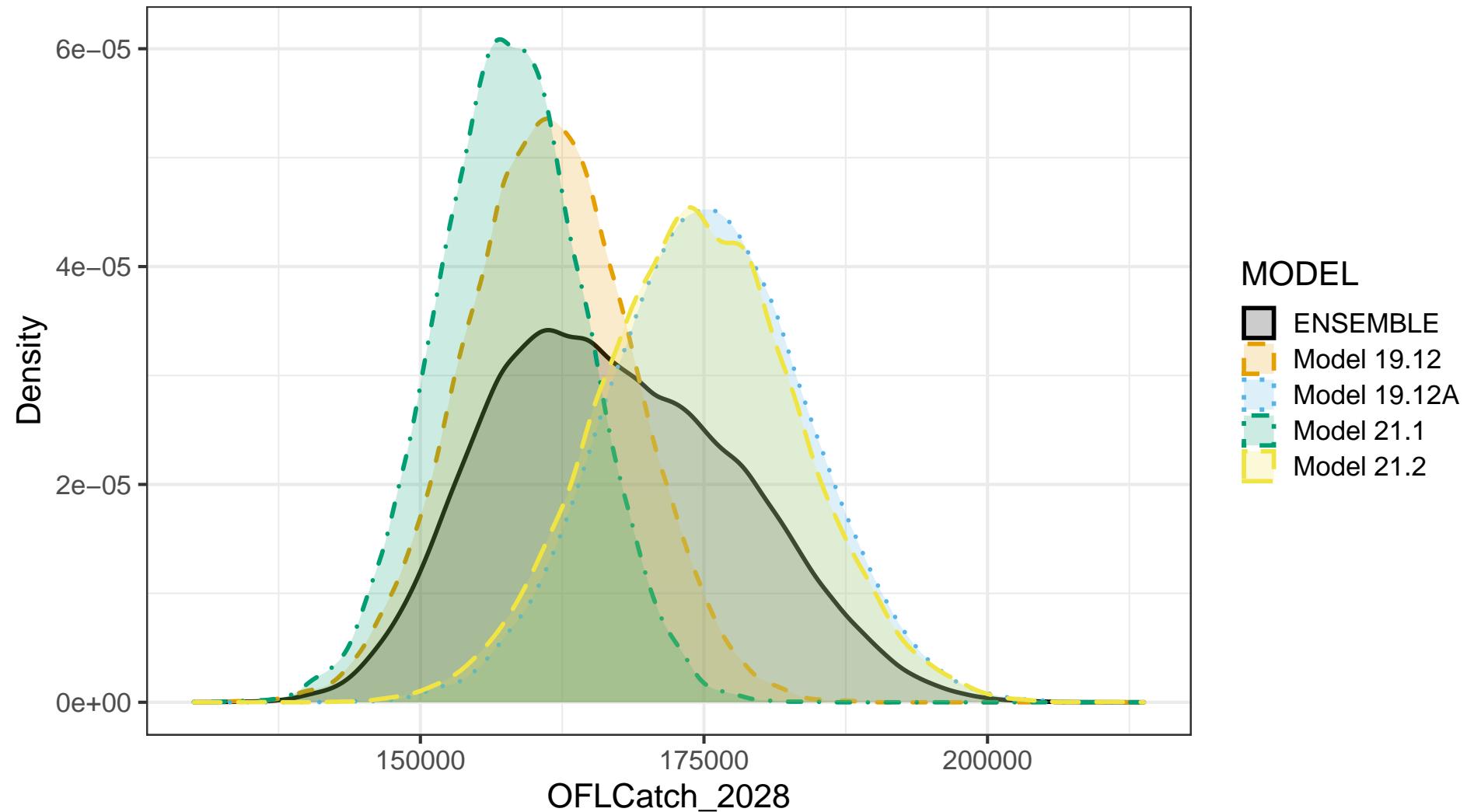
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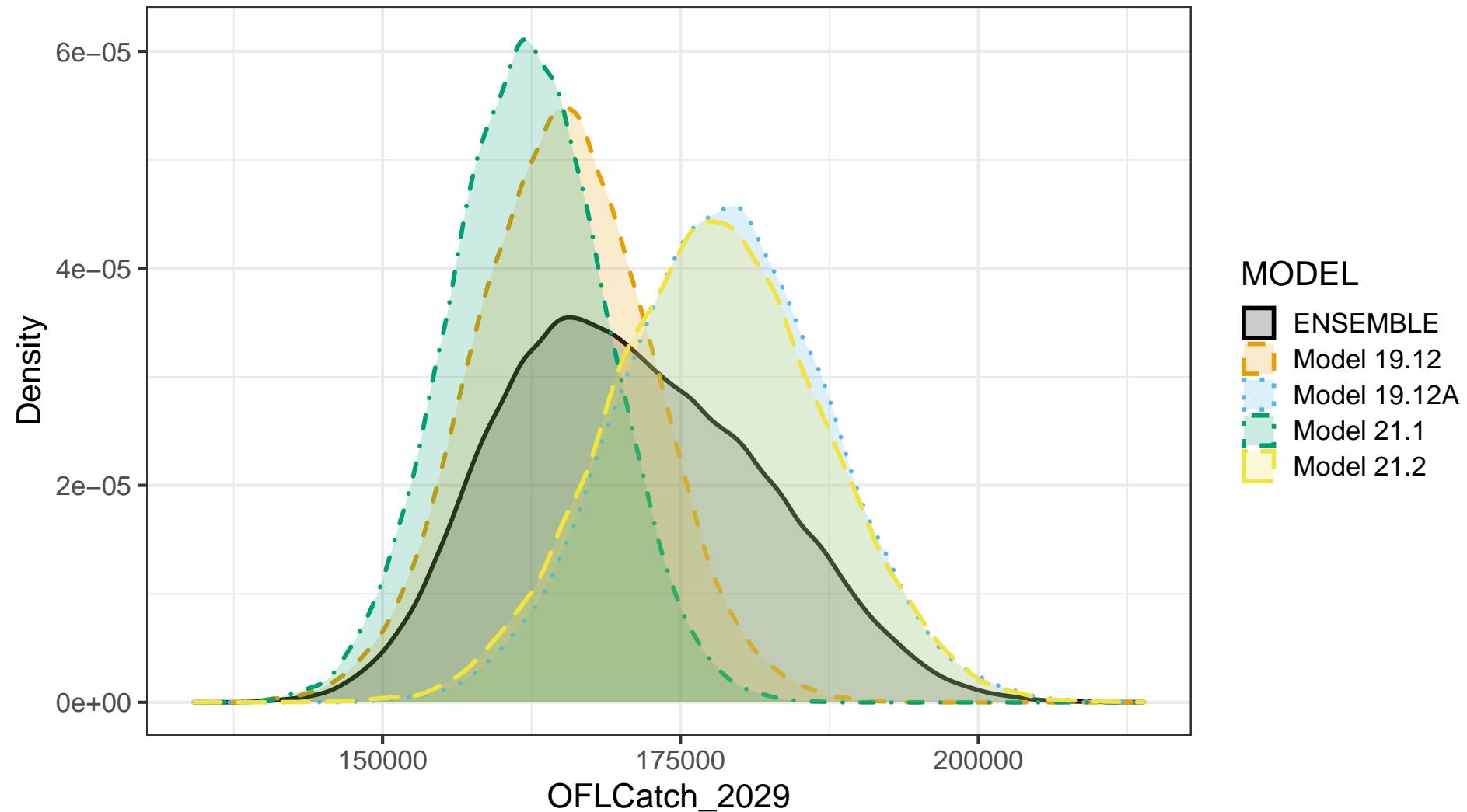
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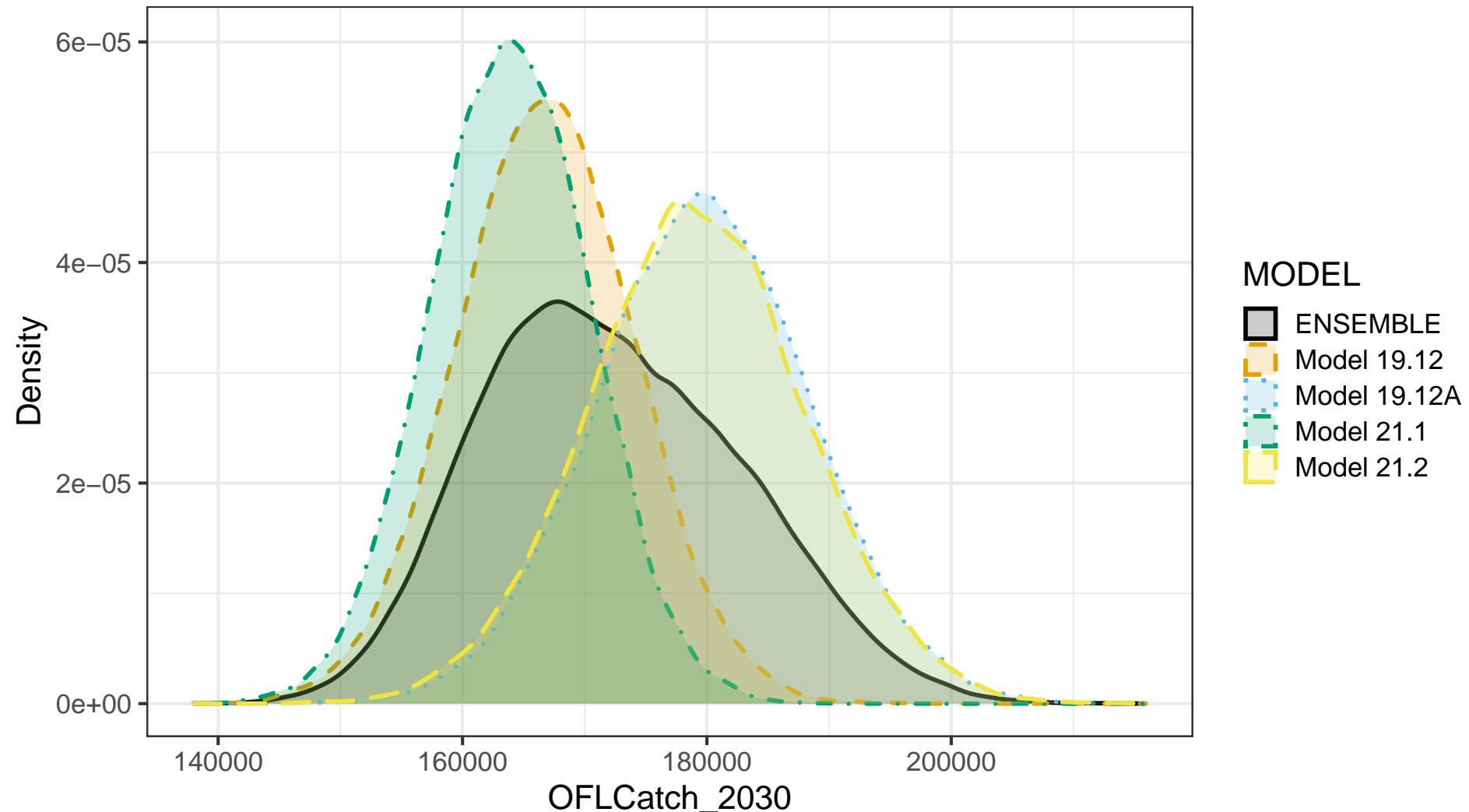
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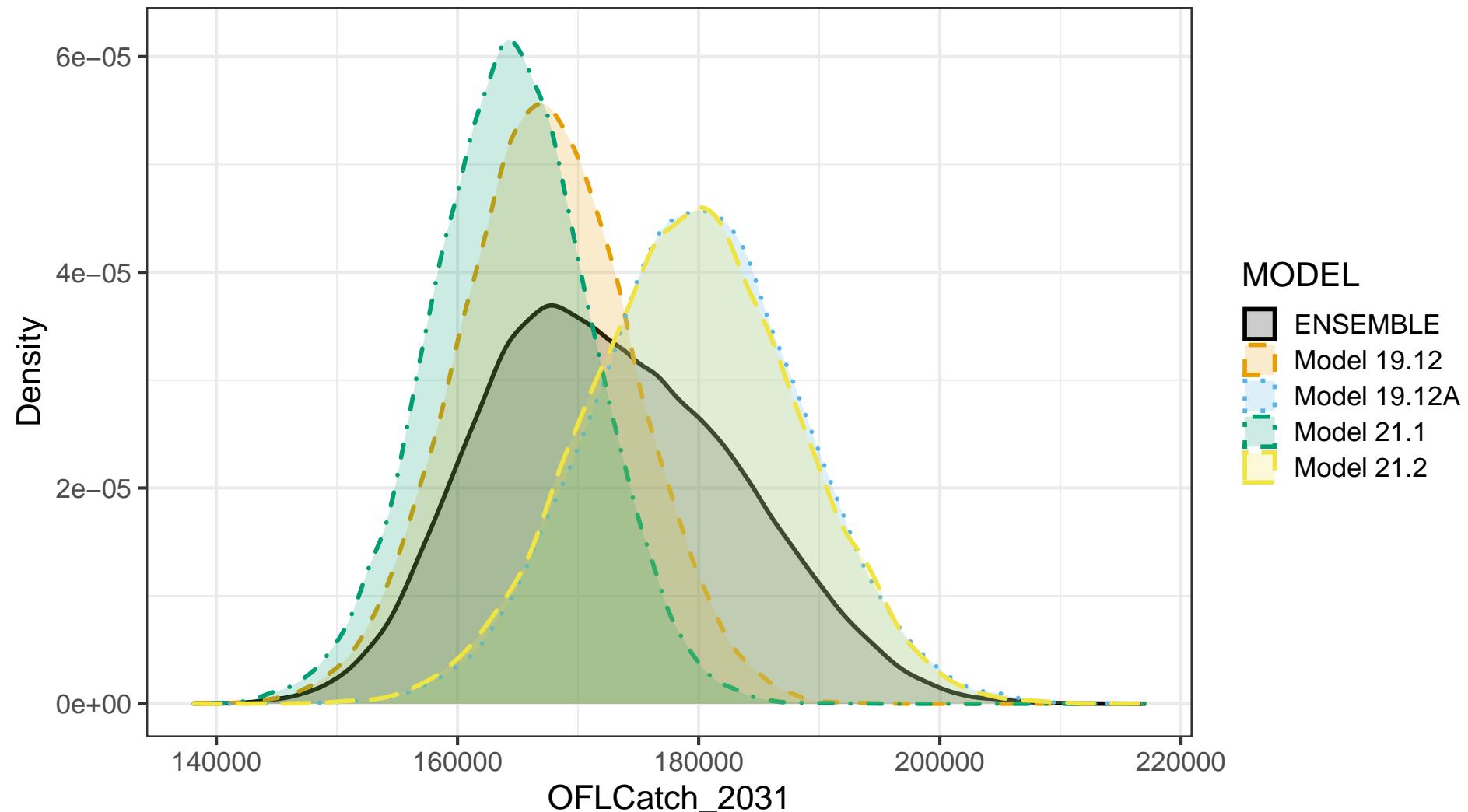
OFLCatch_2029



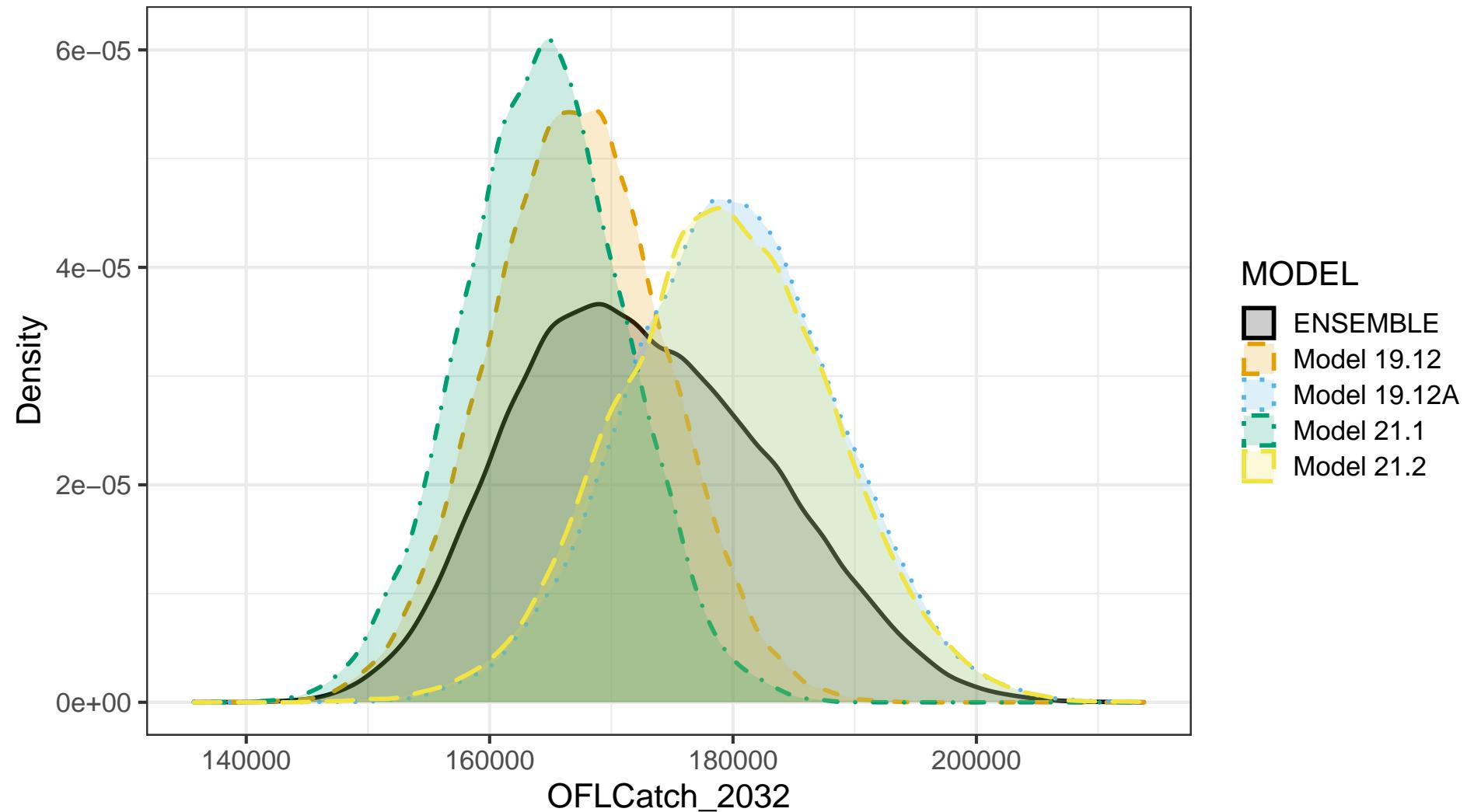
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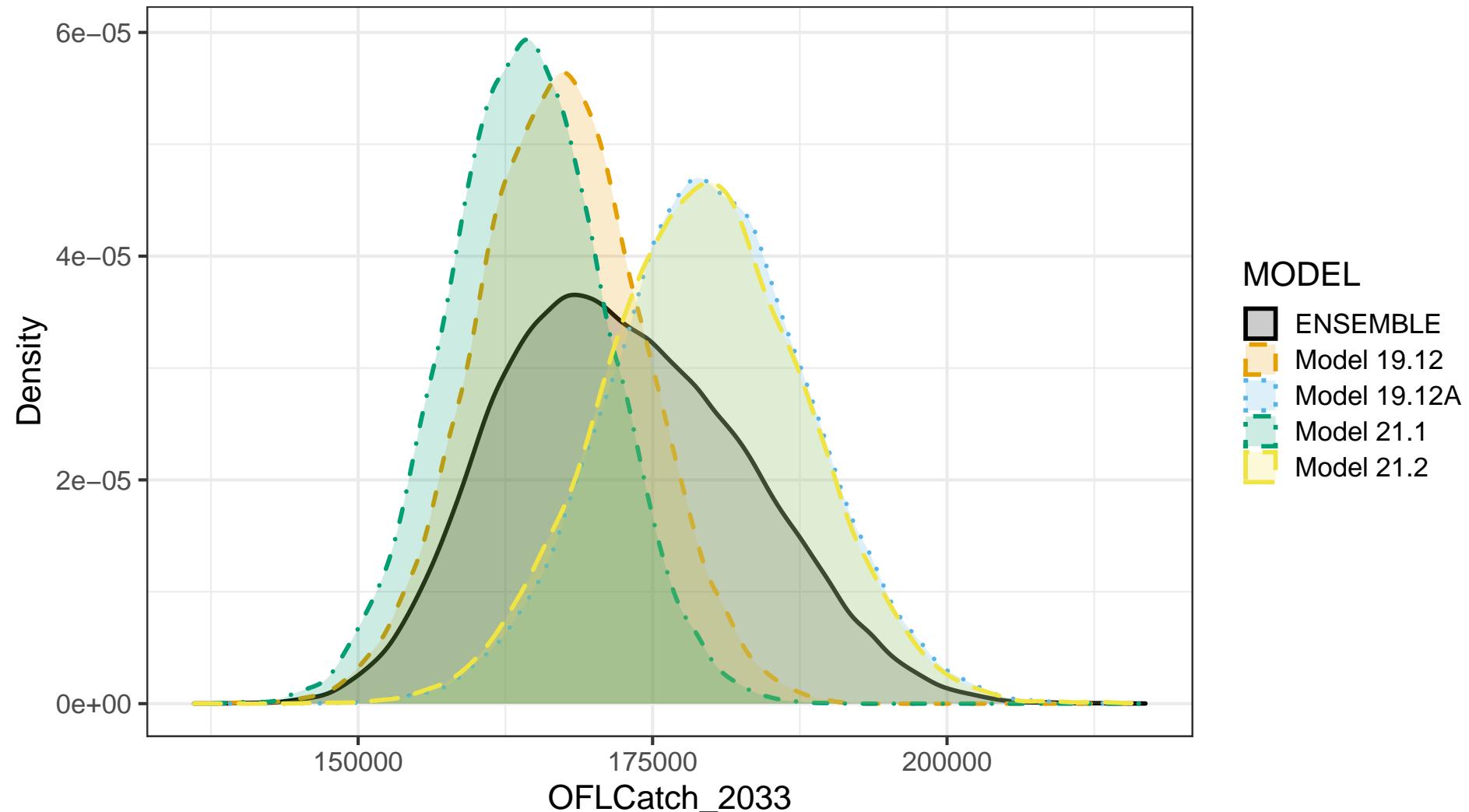
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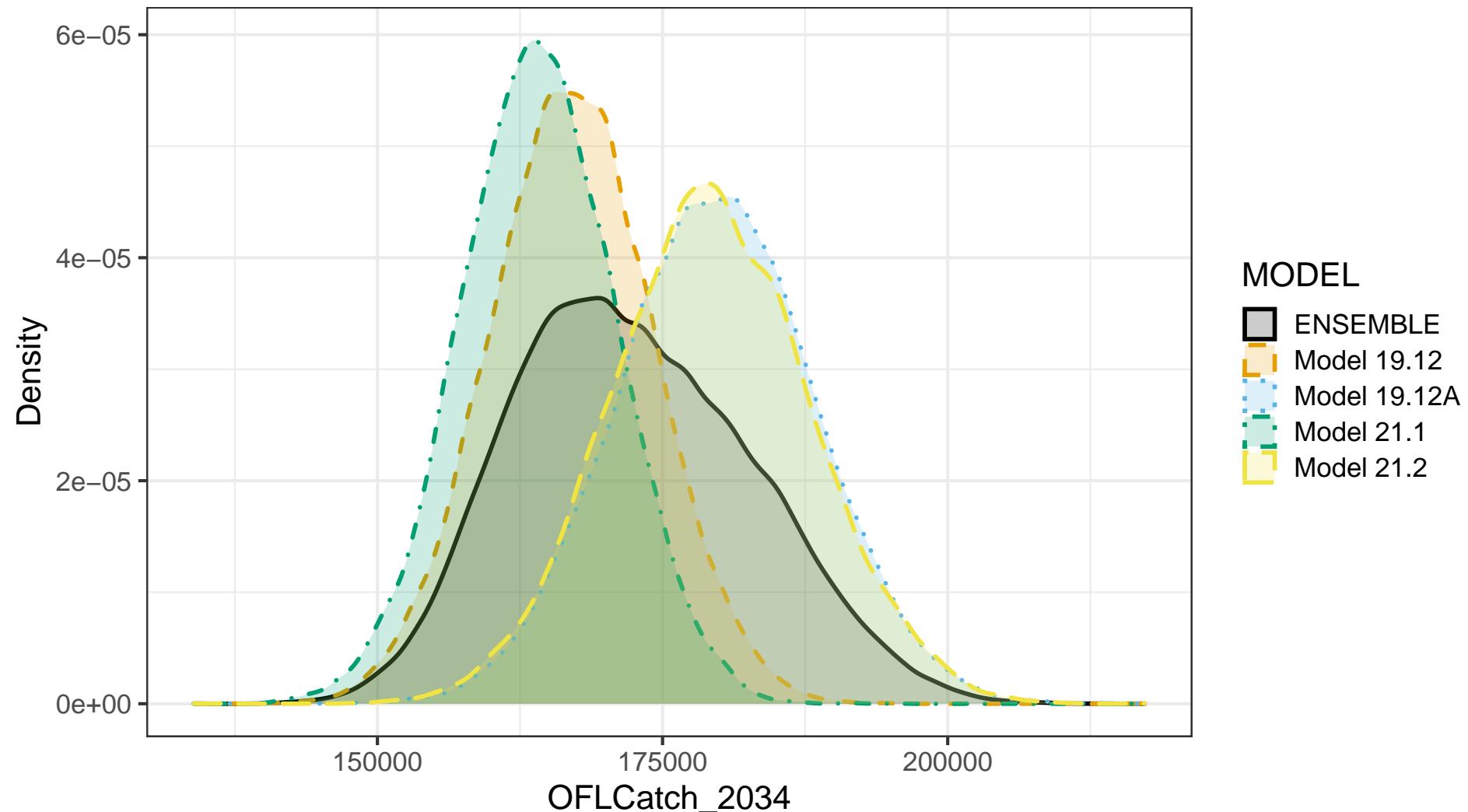
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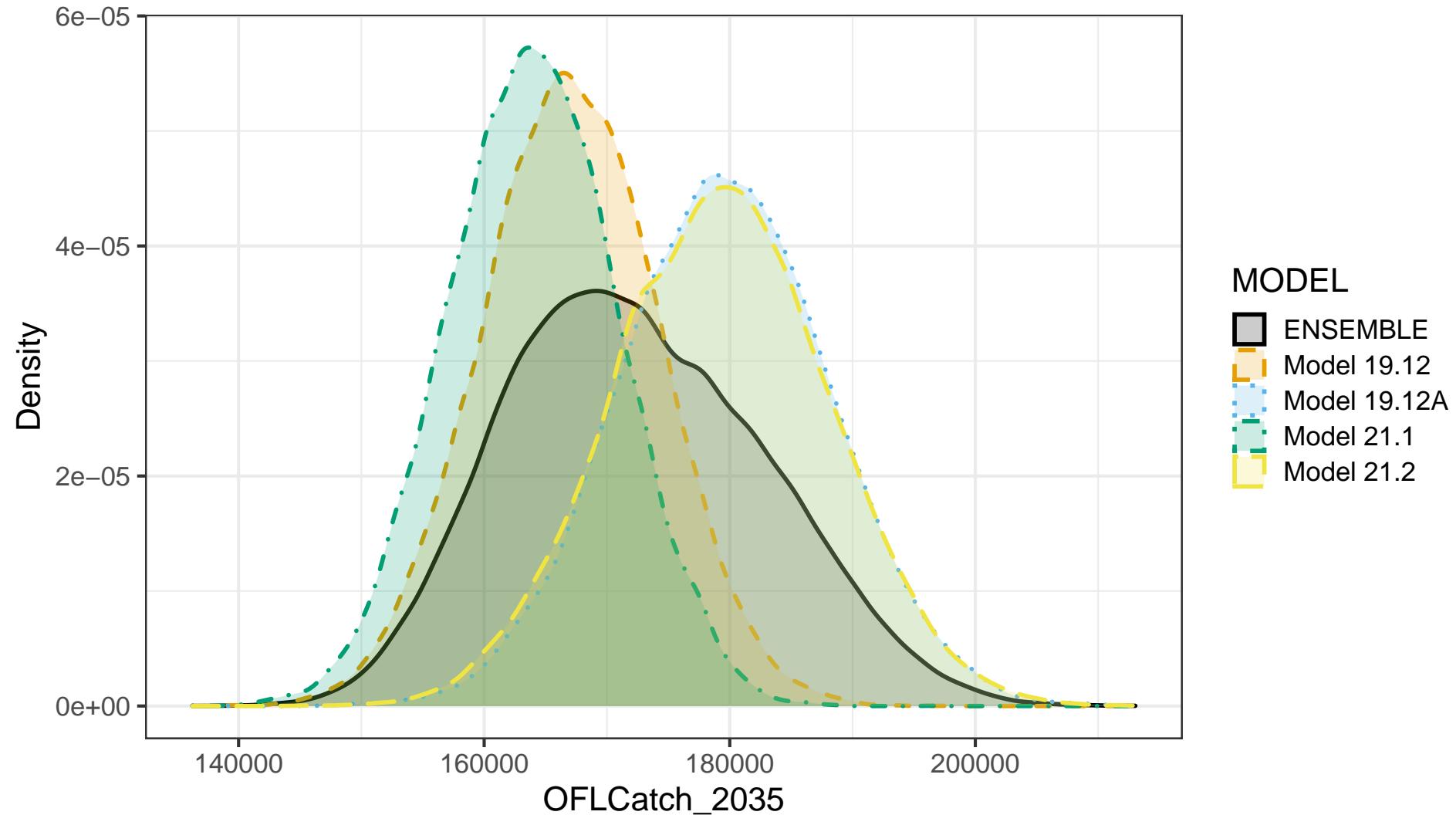
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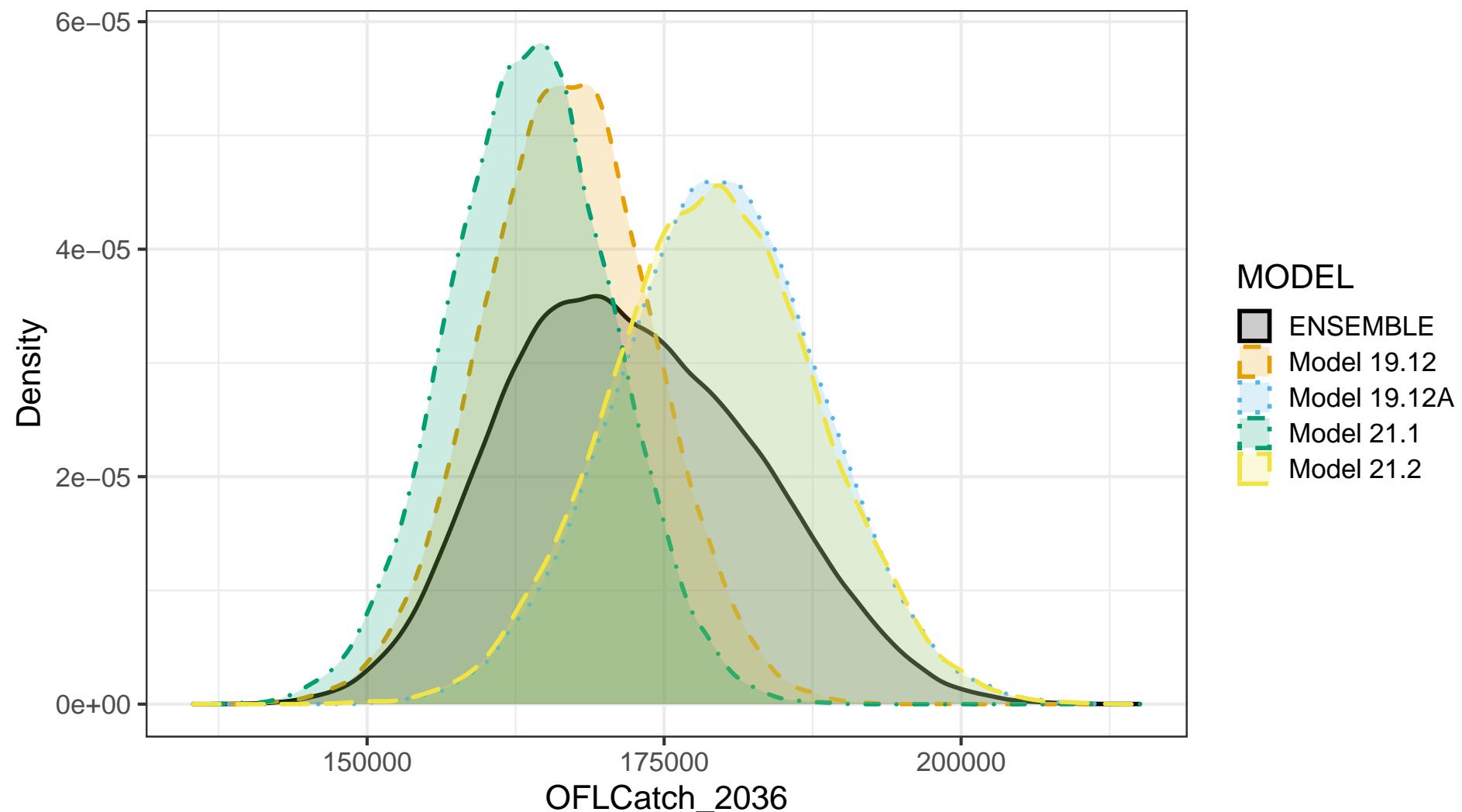
OFLCatch_2034



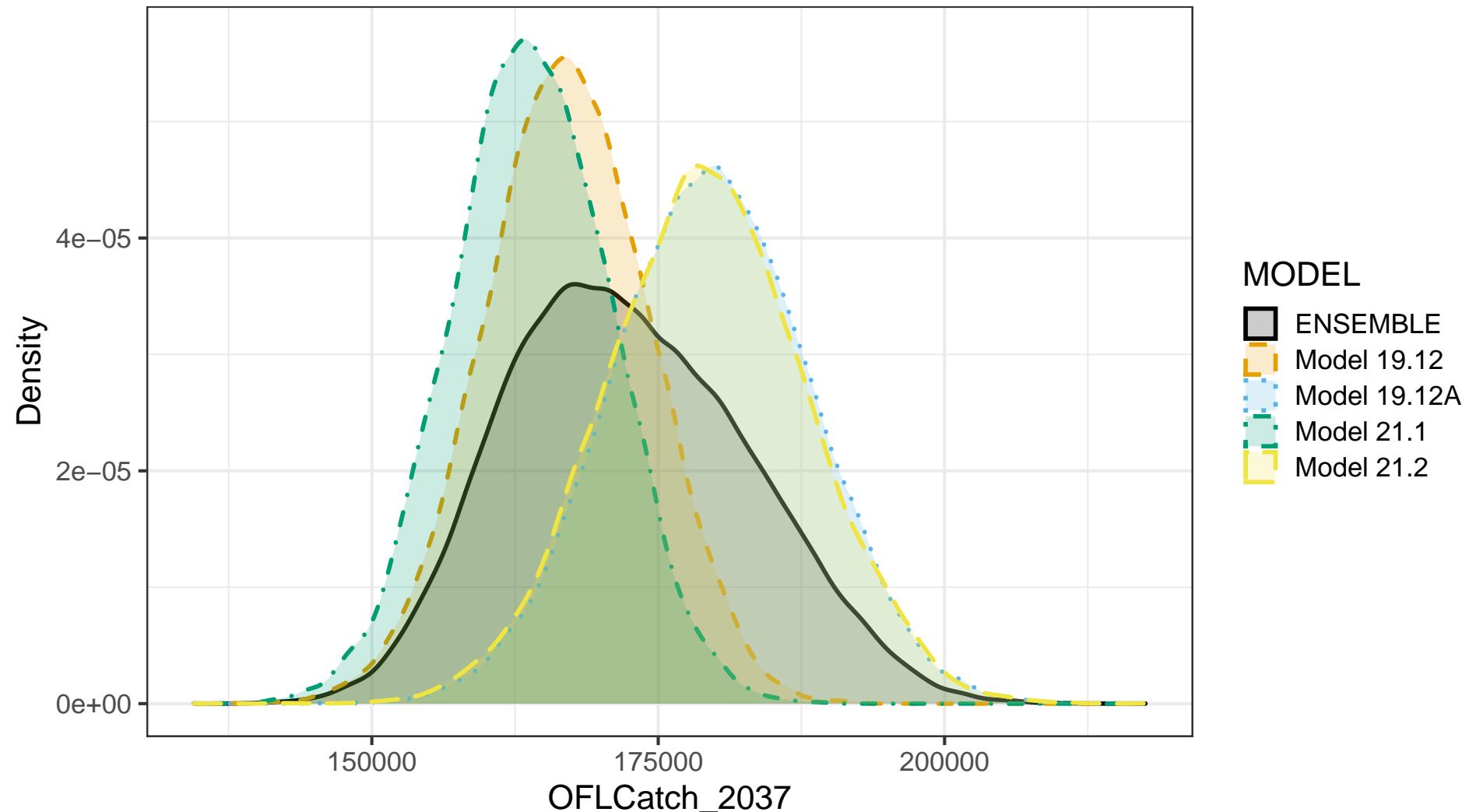
OFLCatch_2035



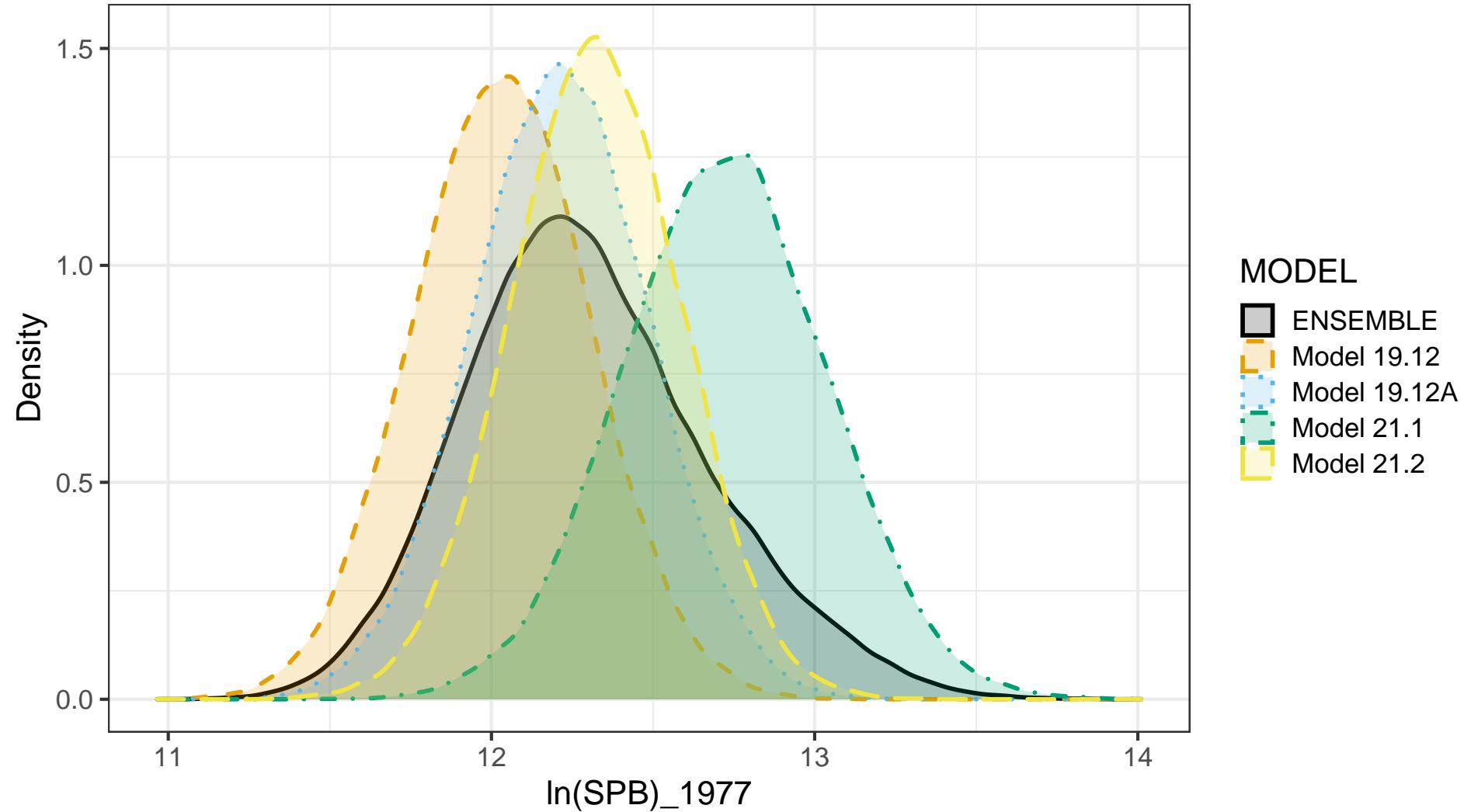
OFLCatch_2036



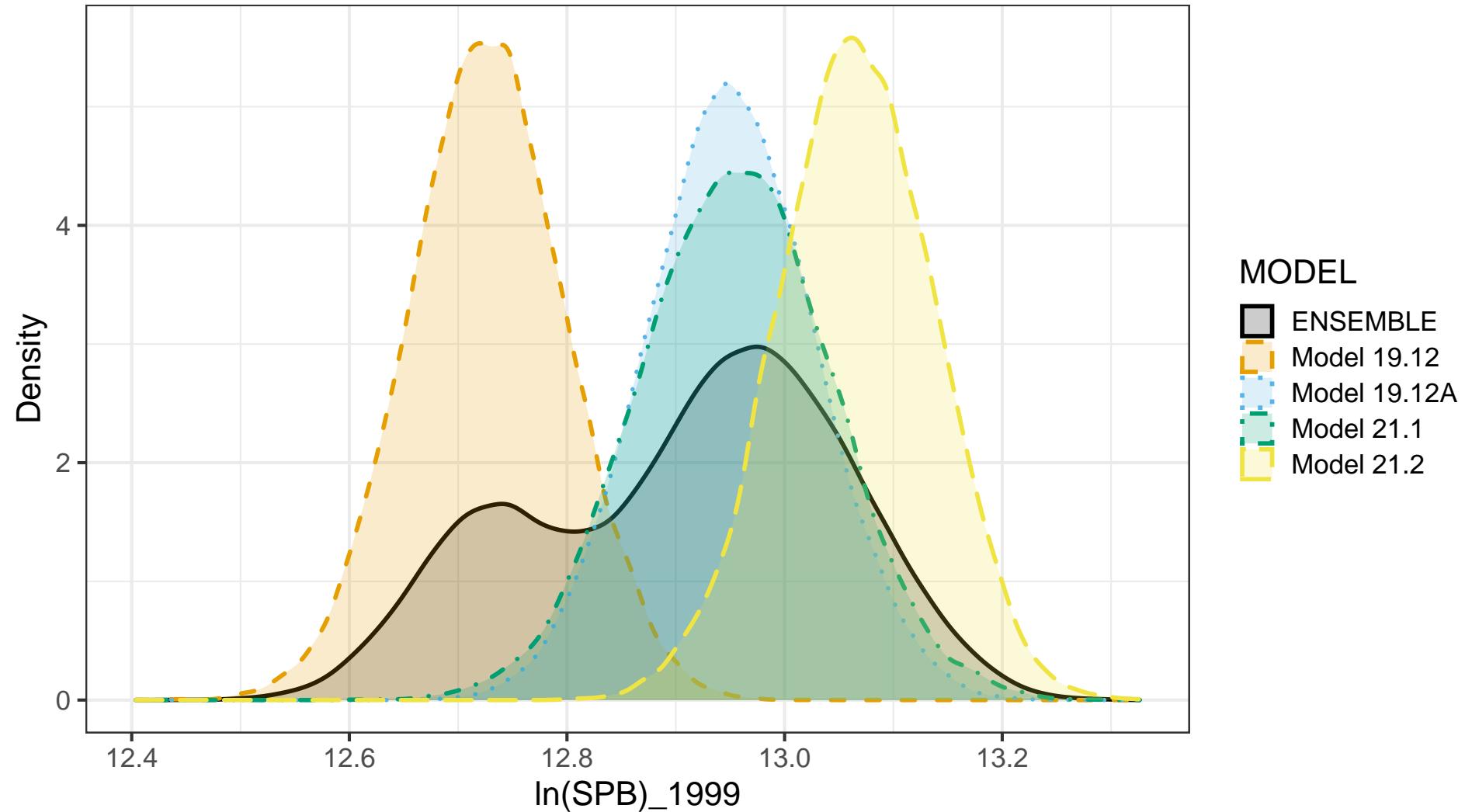
OFLCatch_2037



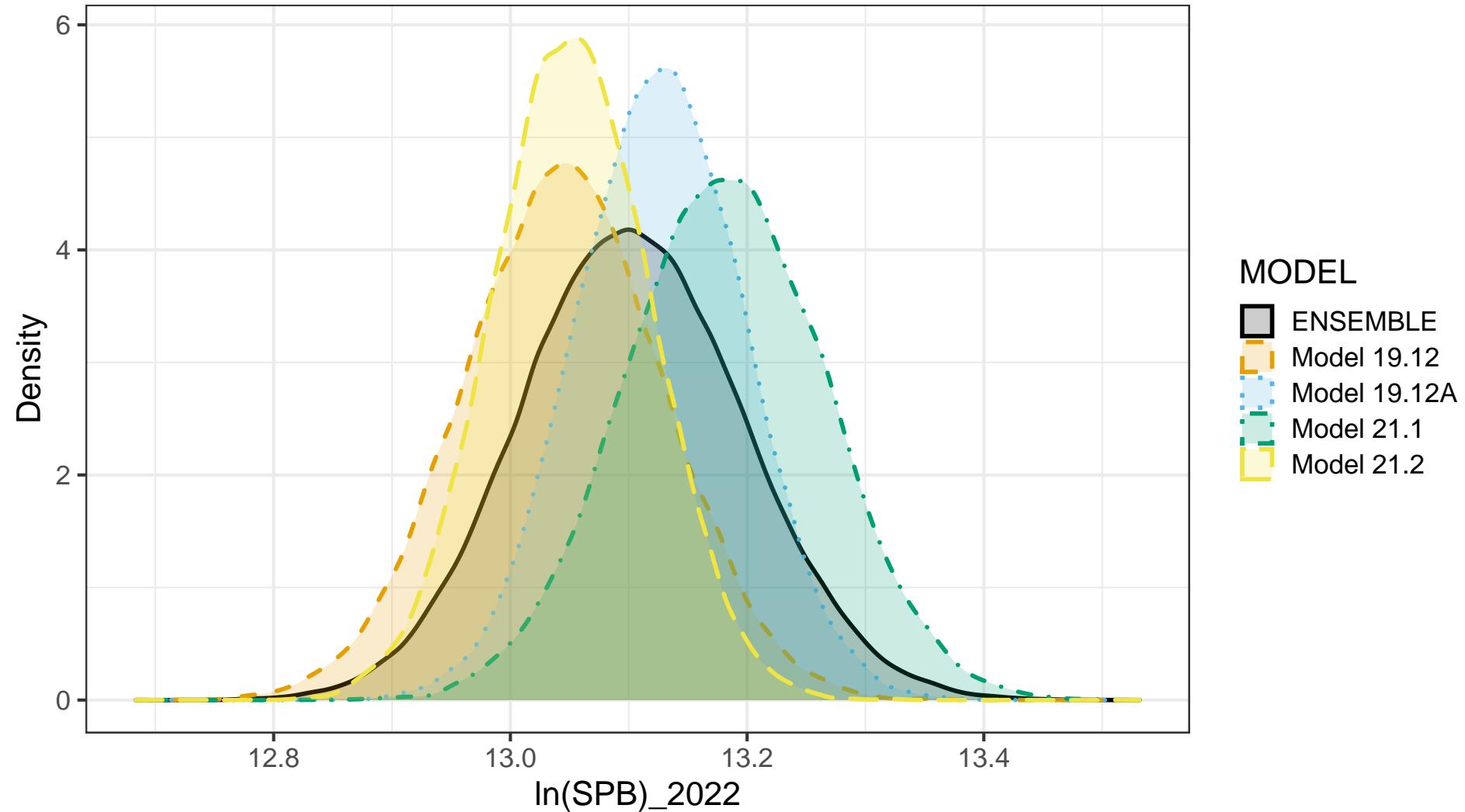
$\ln(\text{SPB})_{1977}$



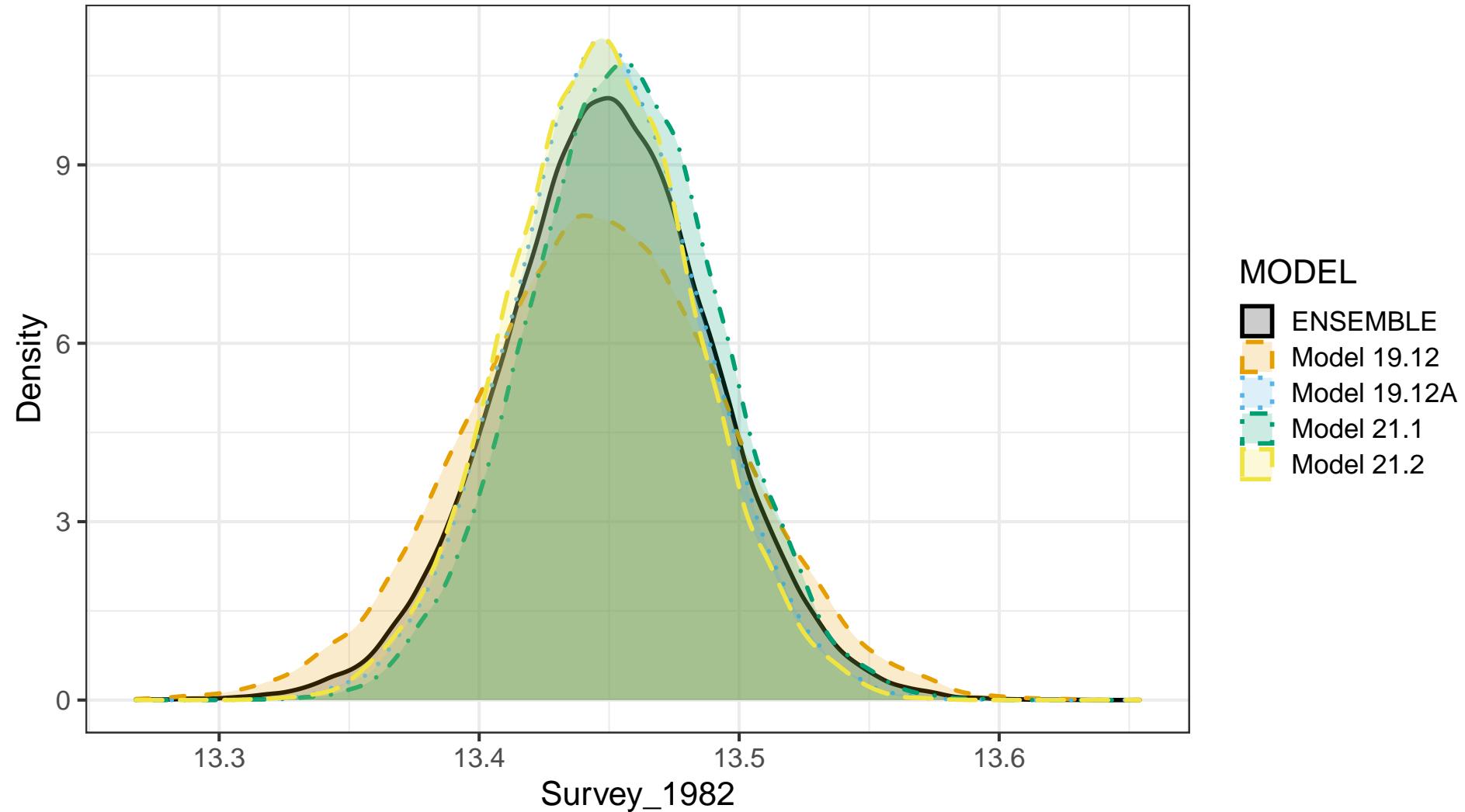
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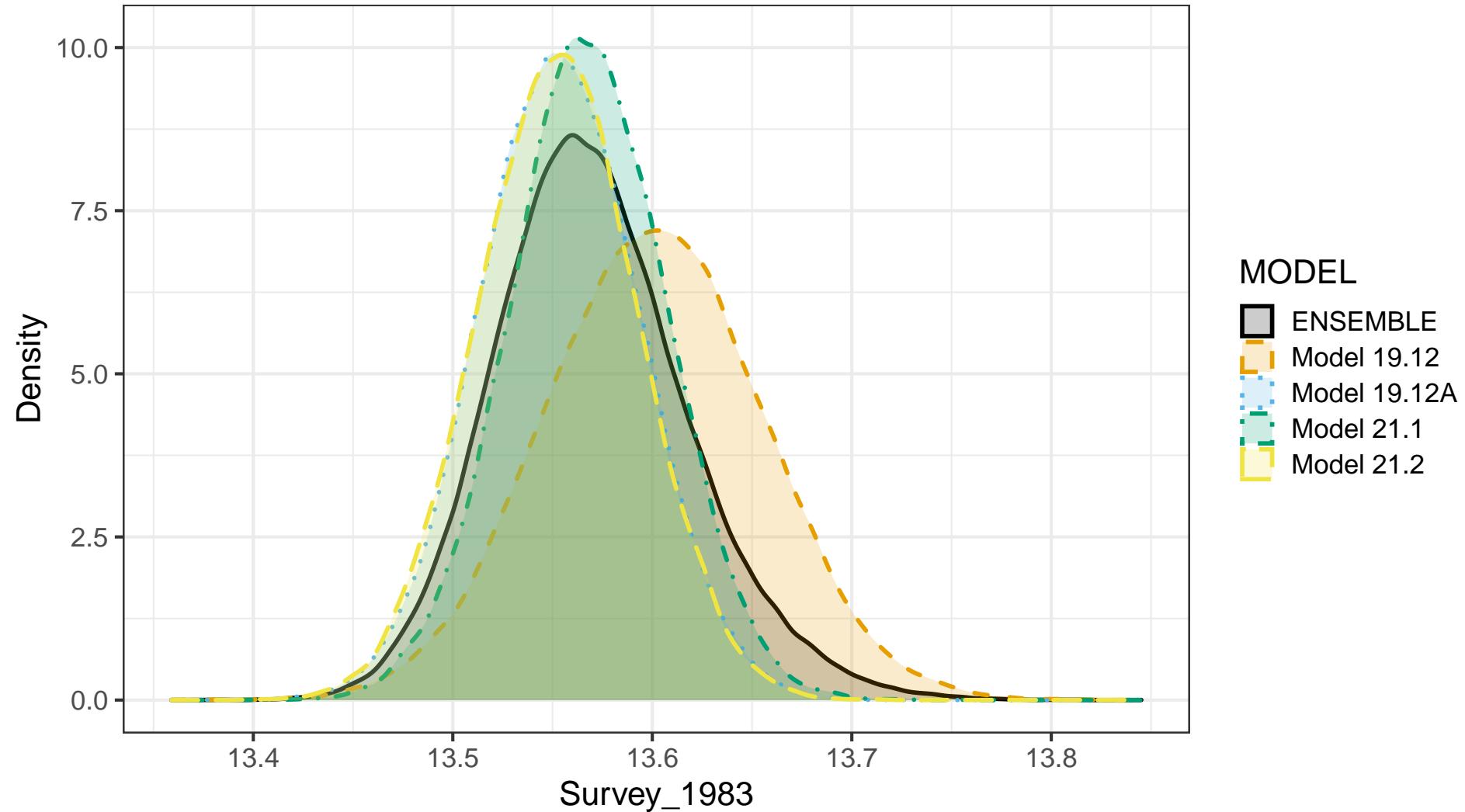
ln(SPB)_2022



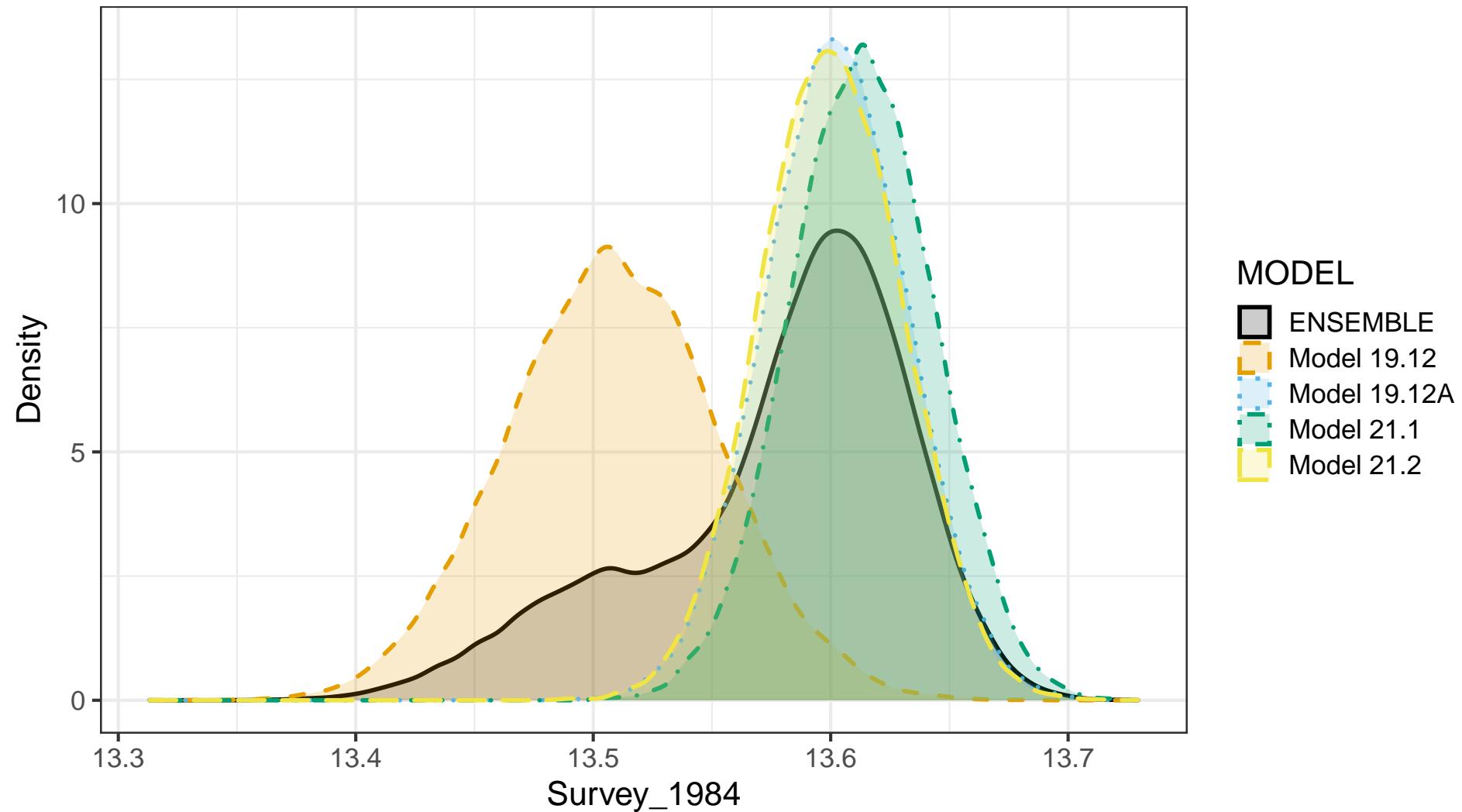
Survey_1982



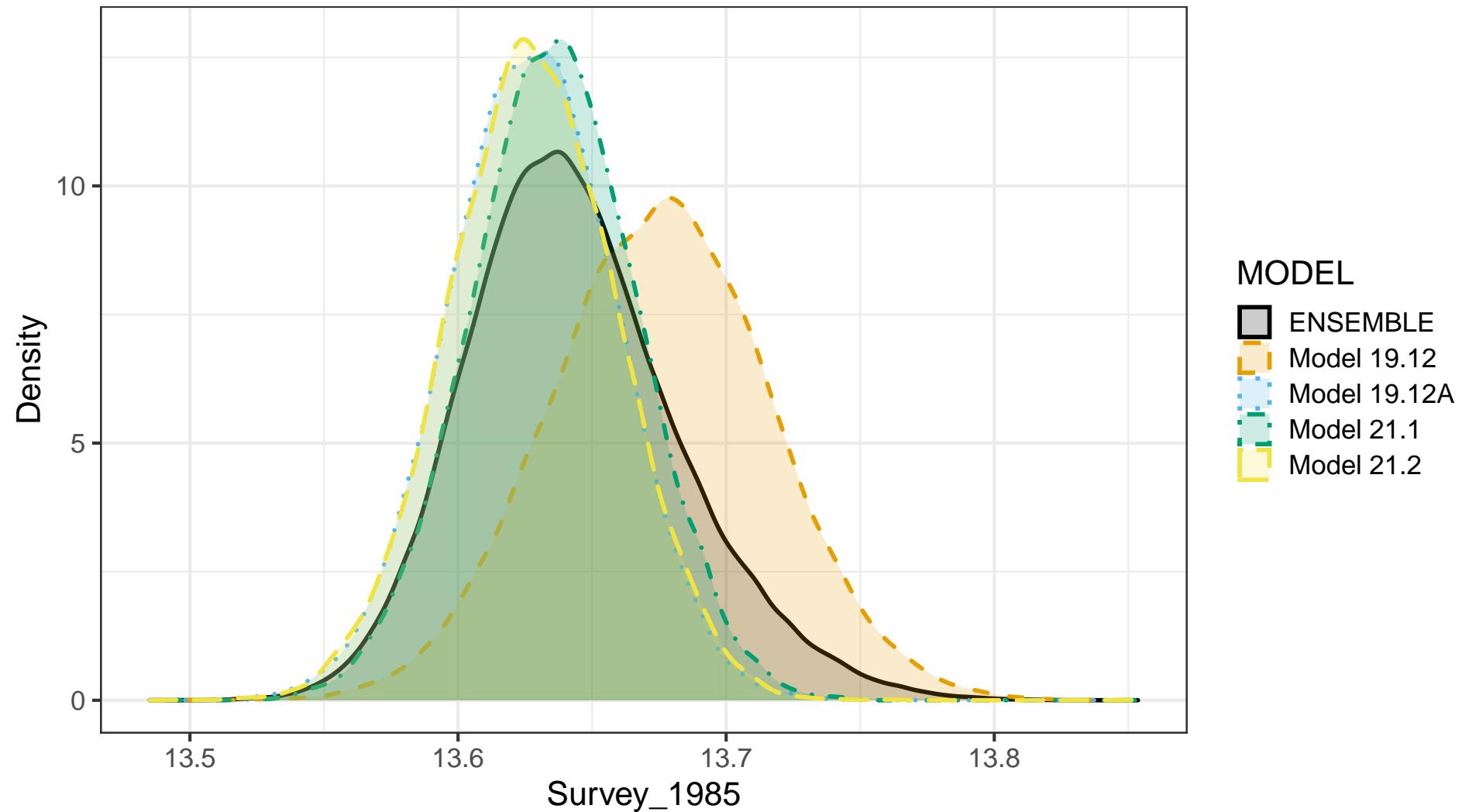
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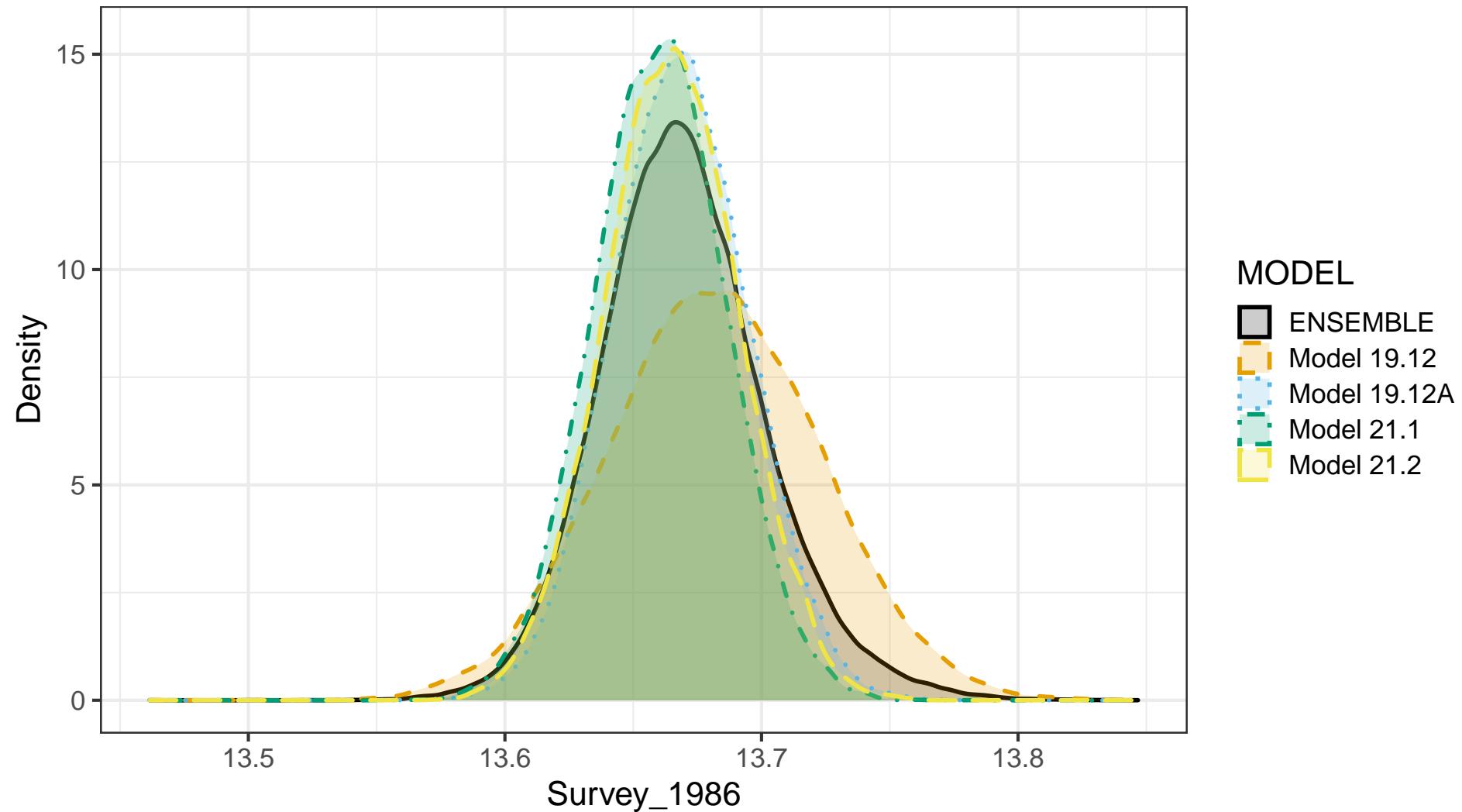
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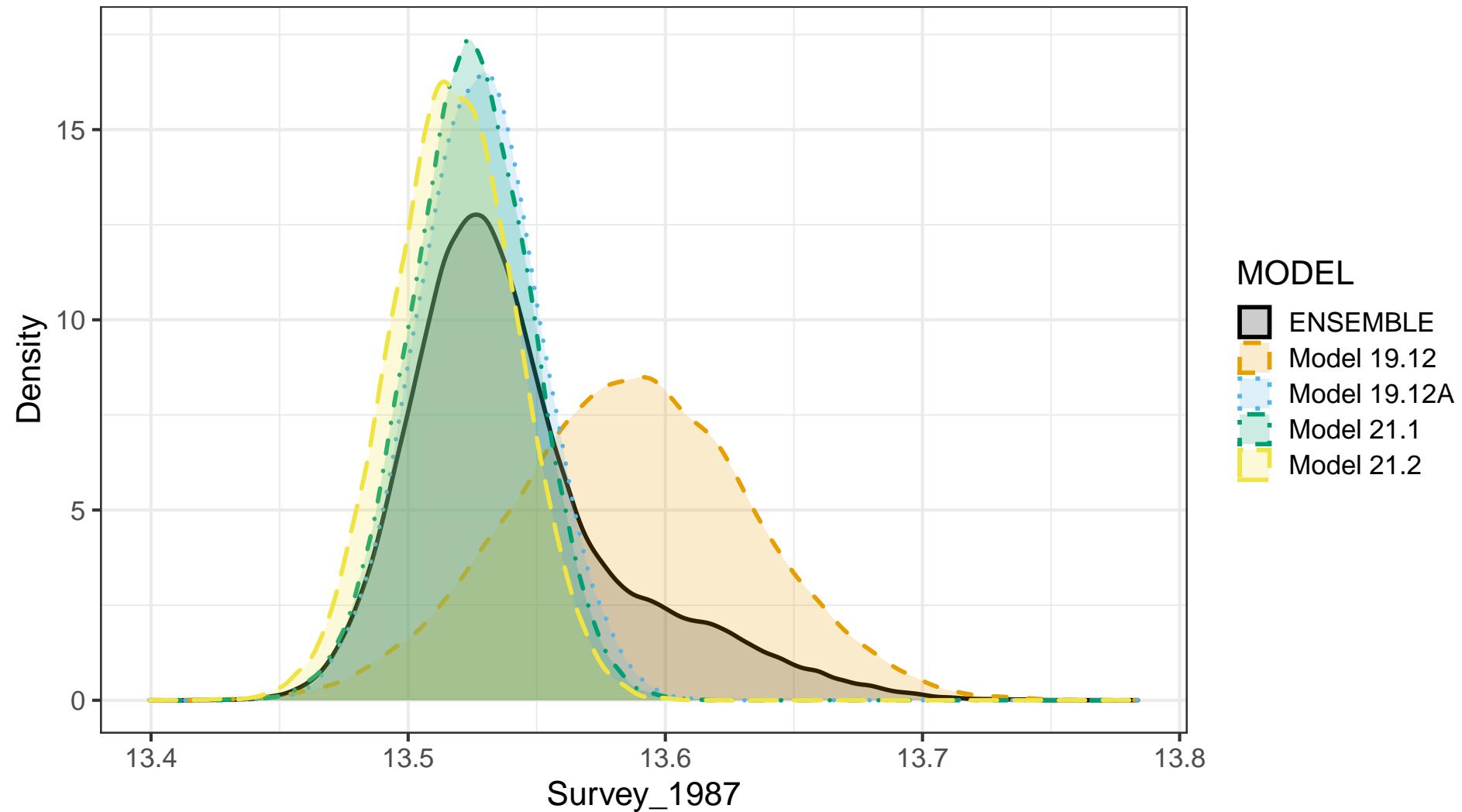
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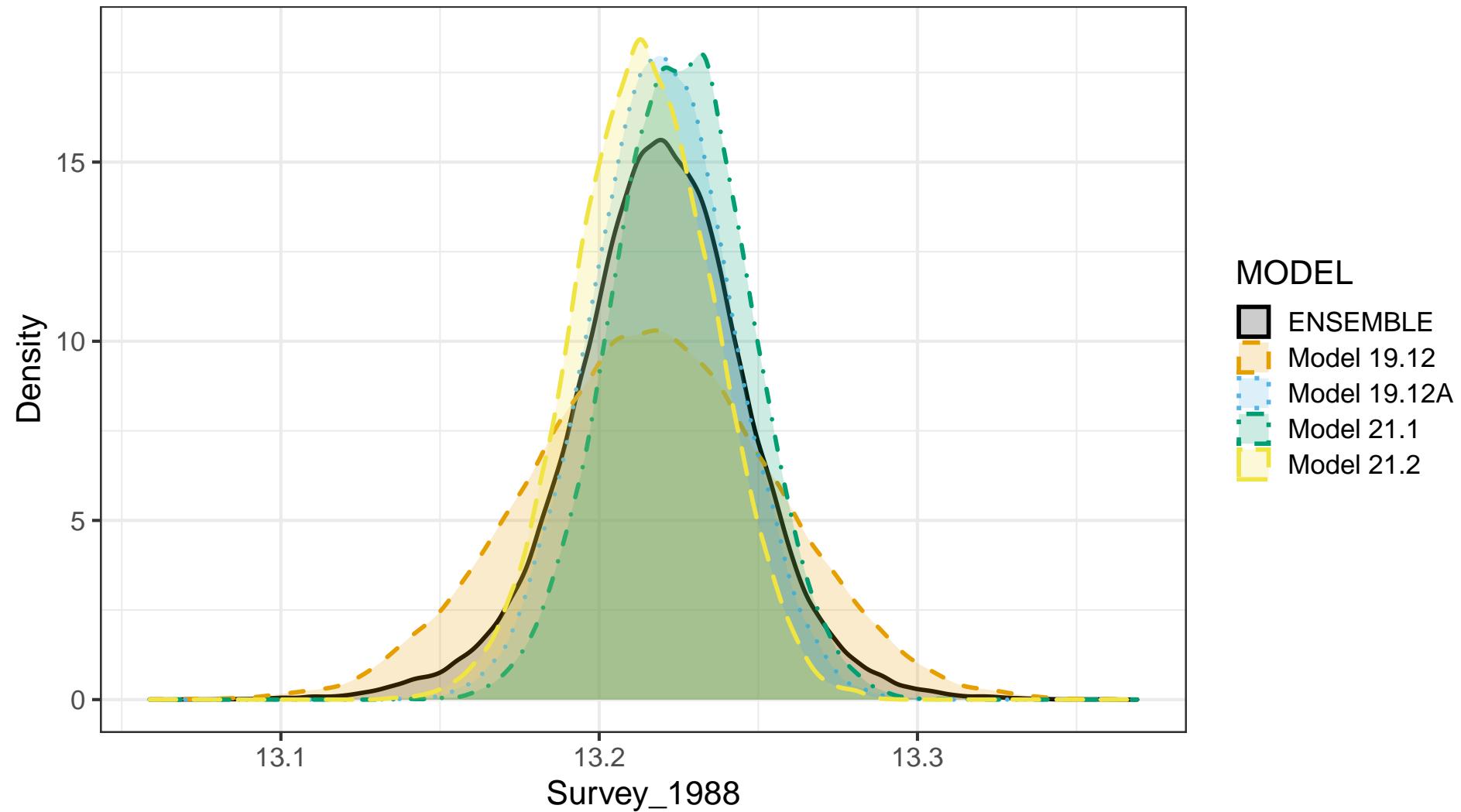
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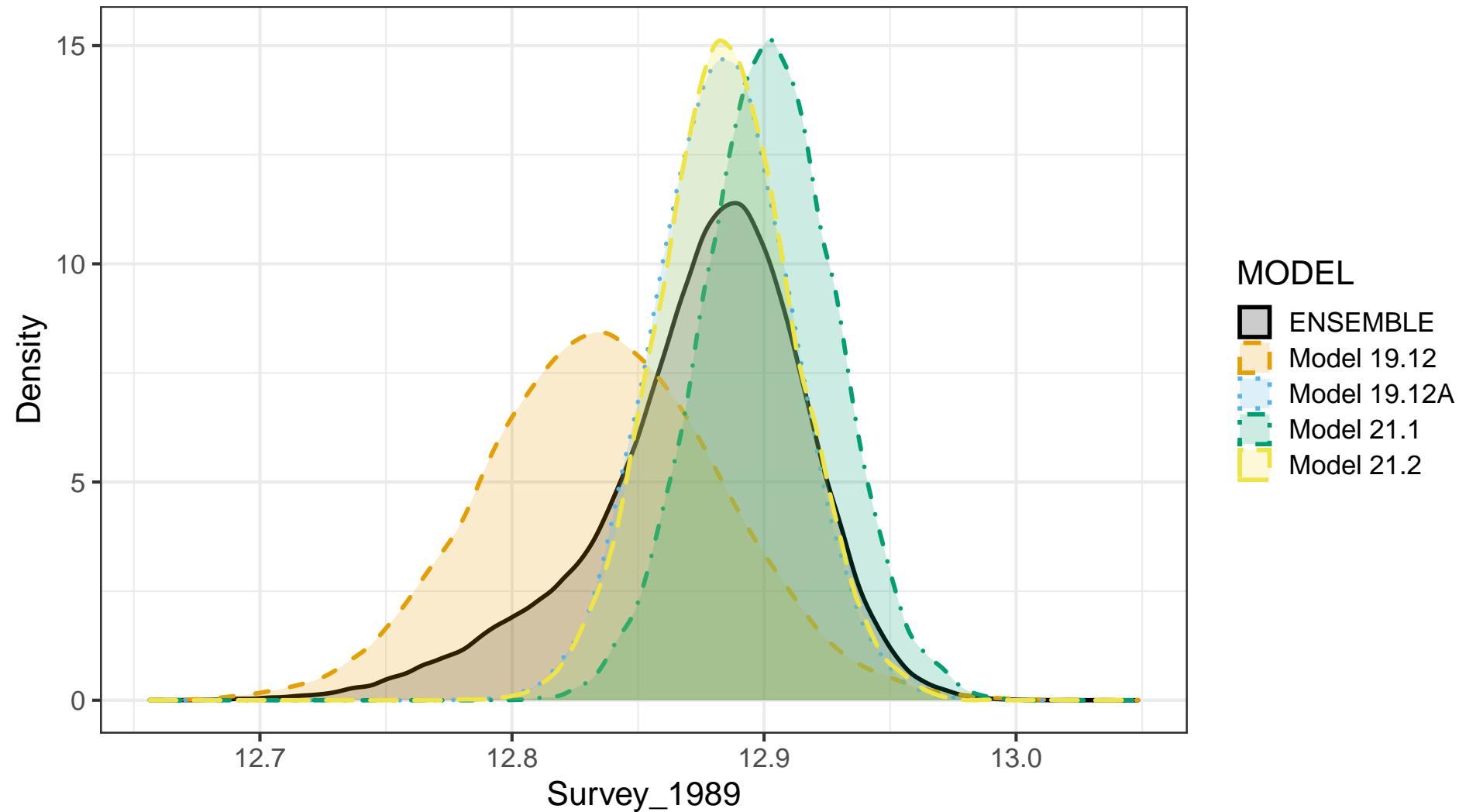
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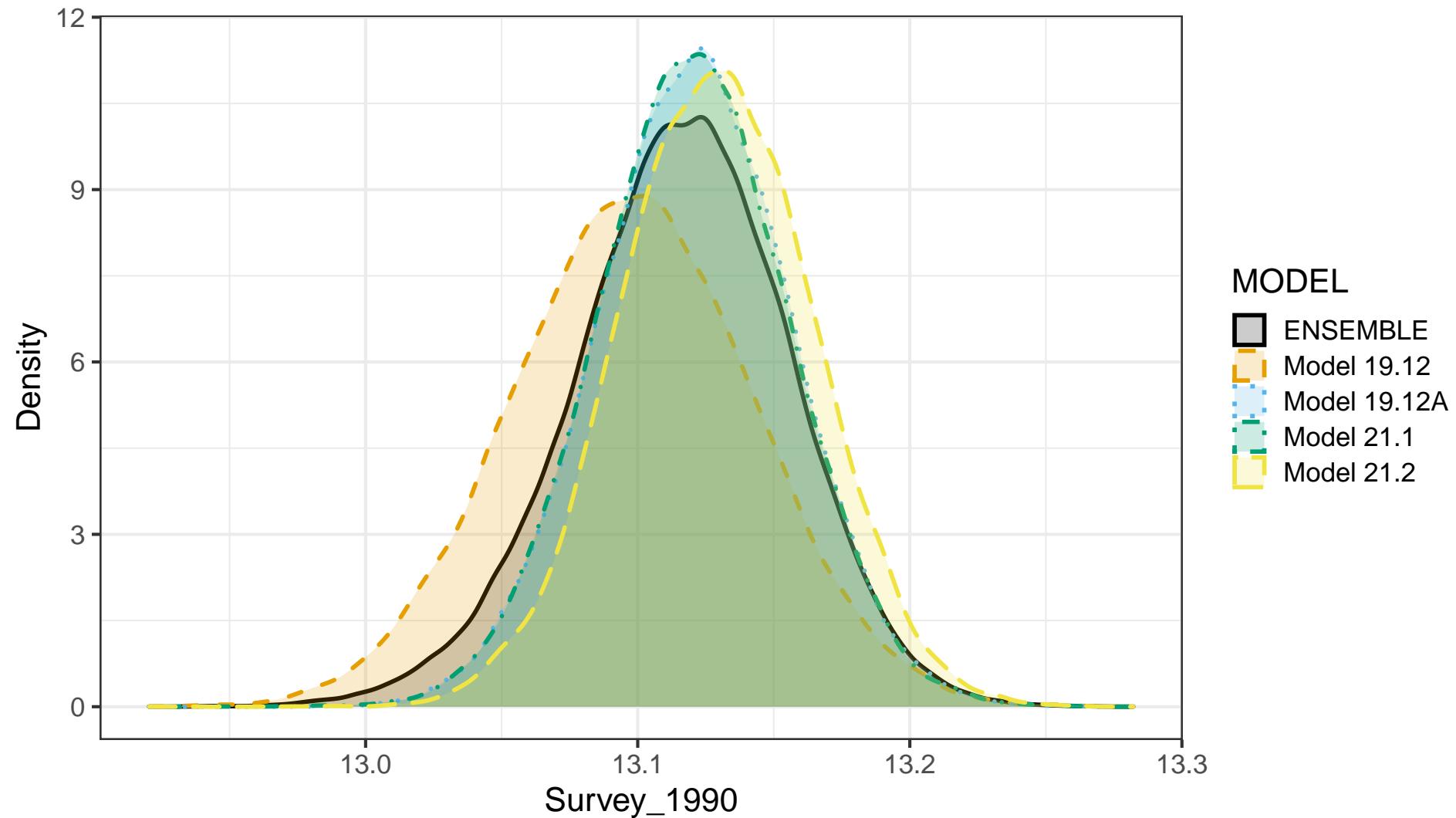
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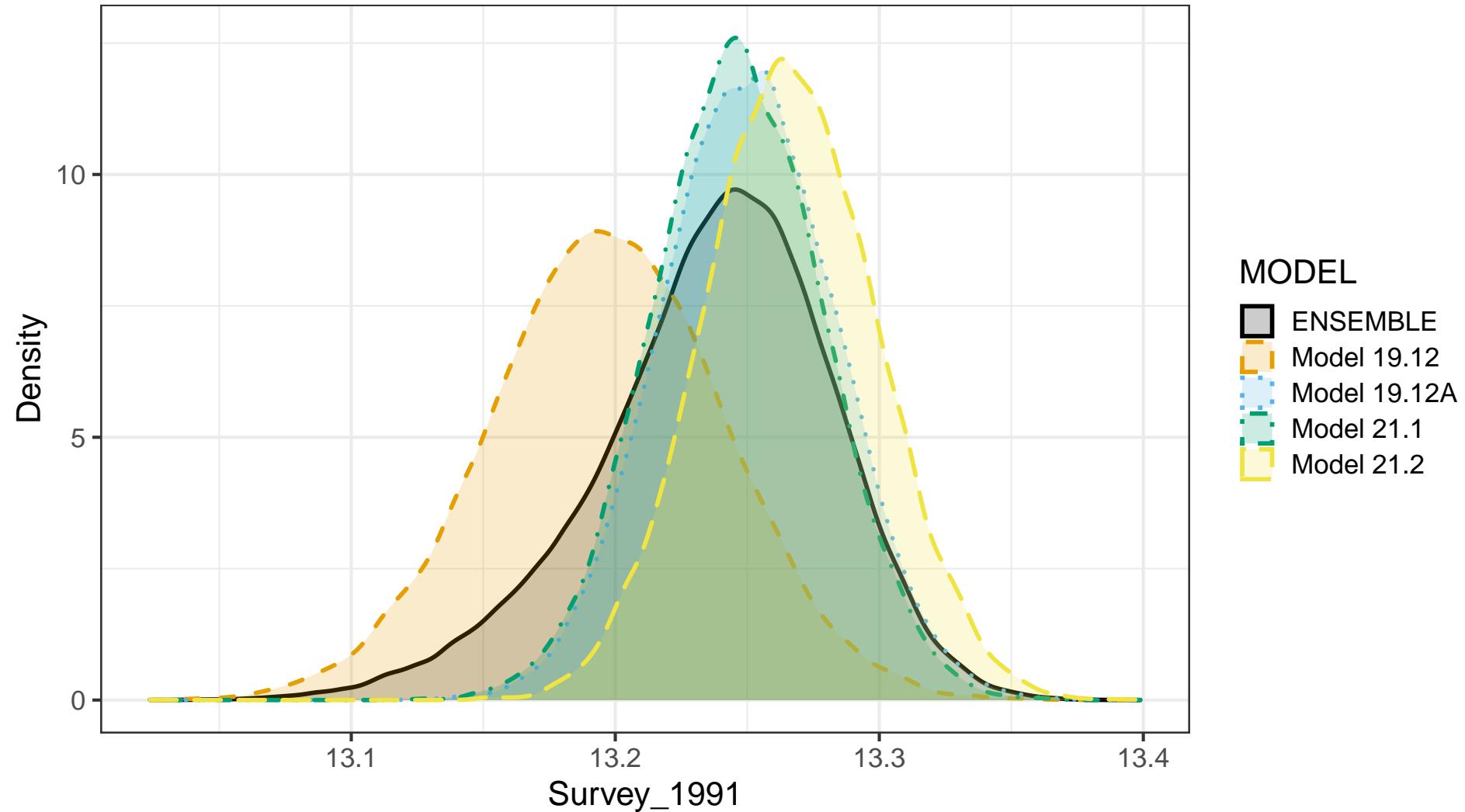
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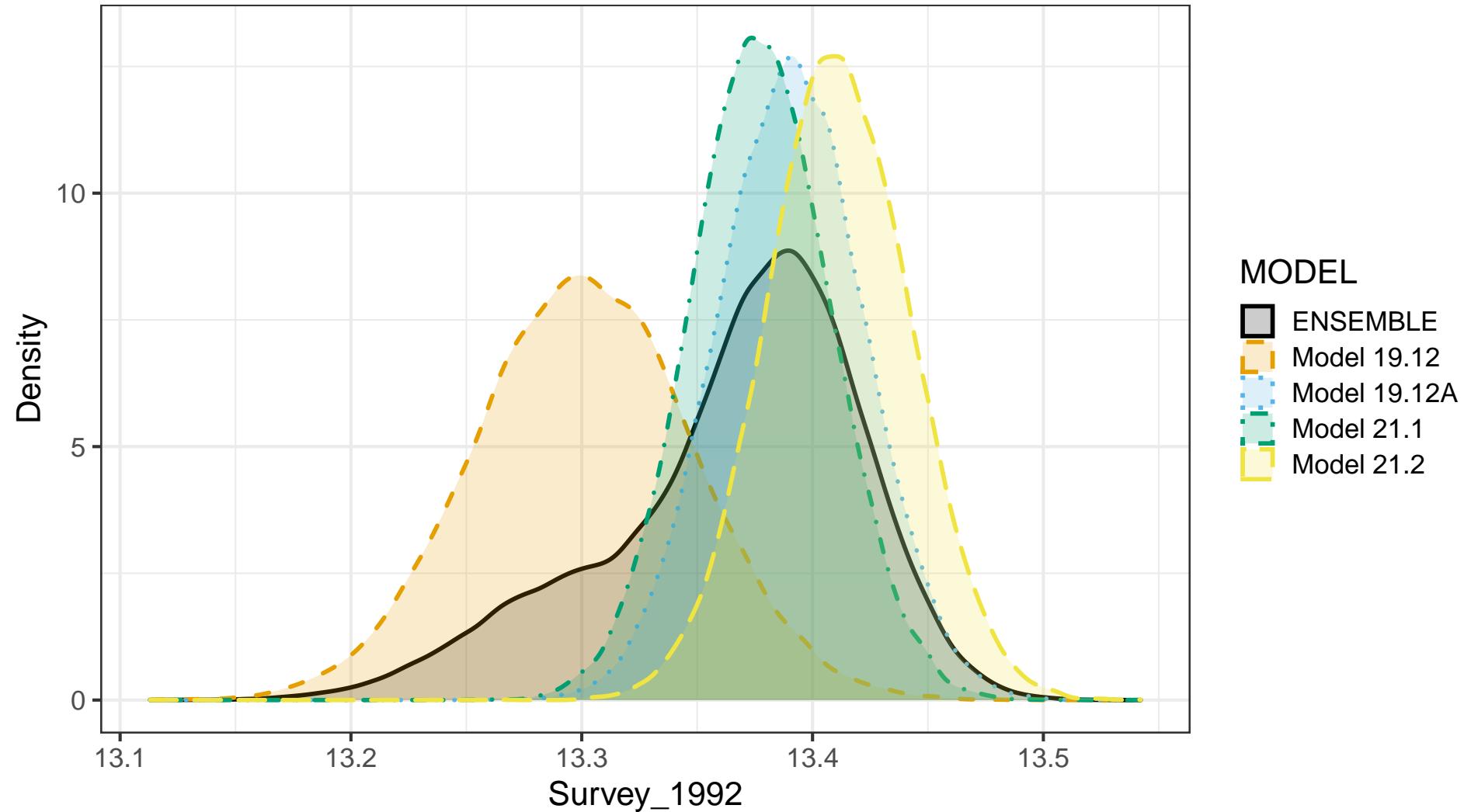
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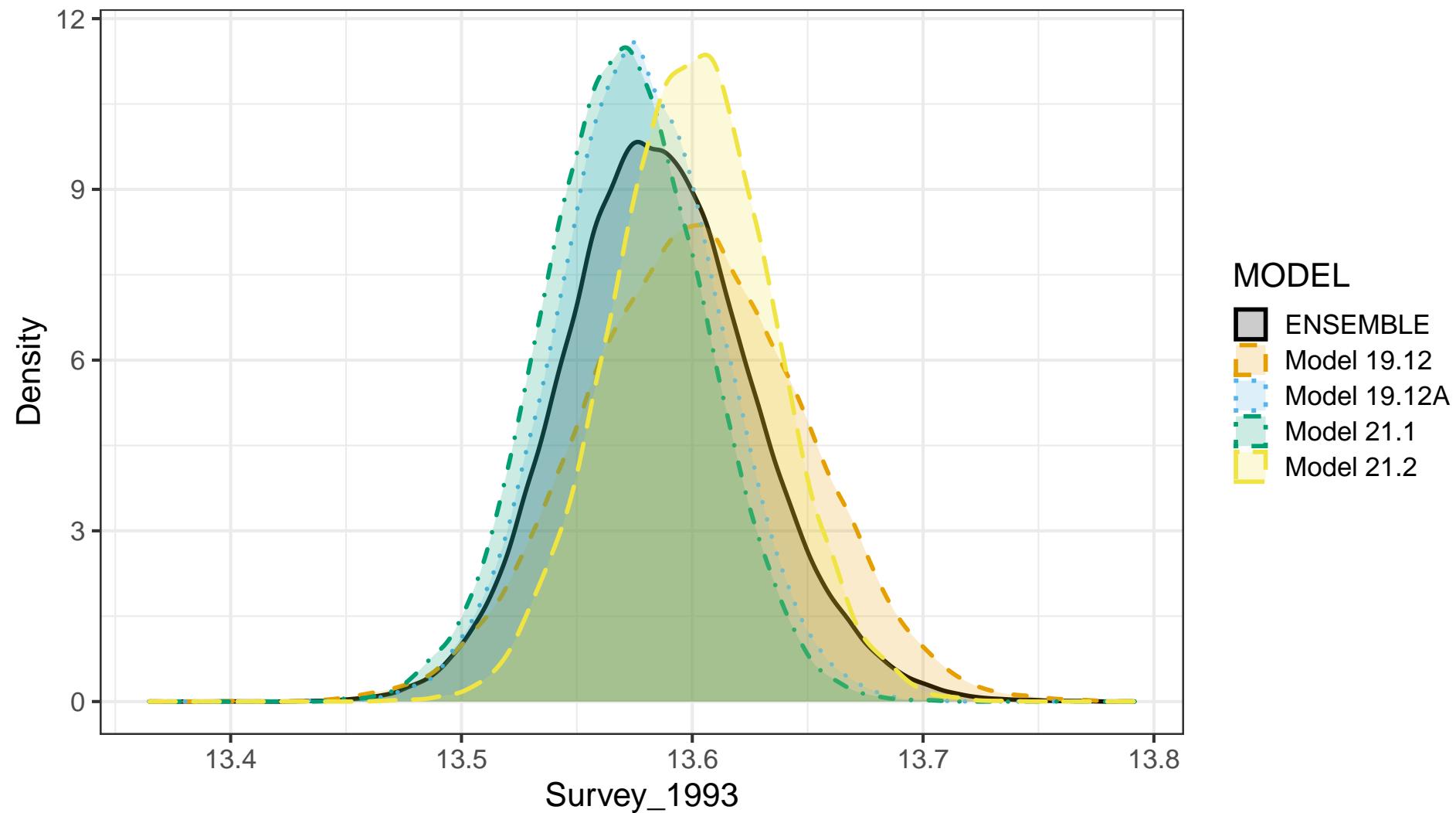
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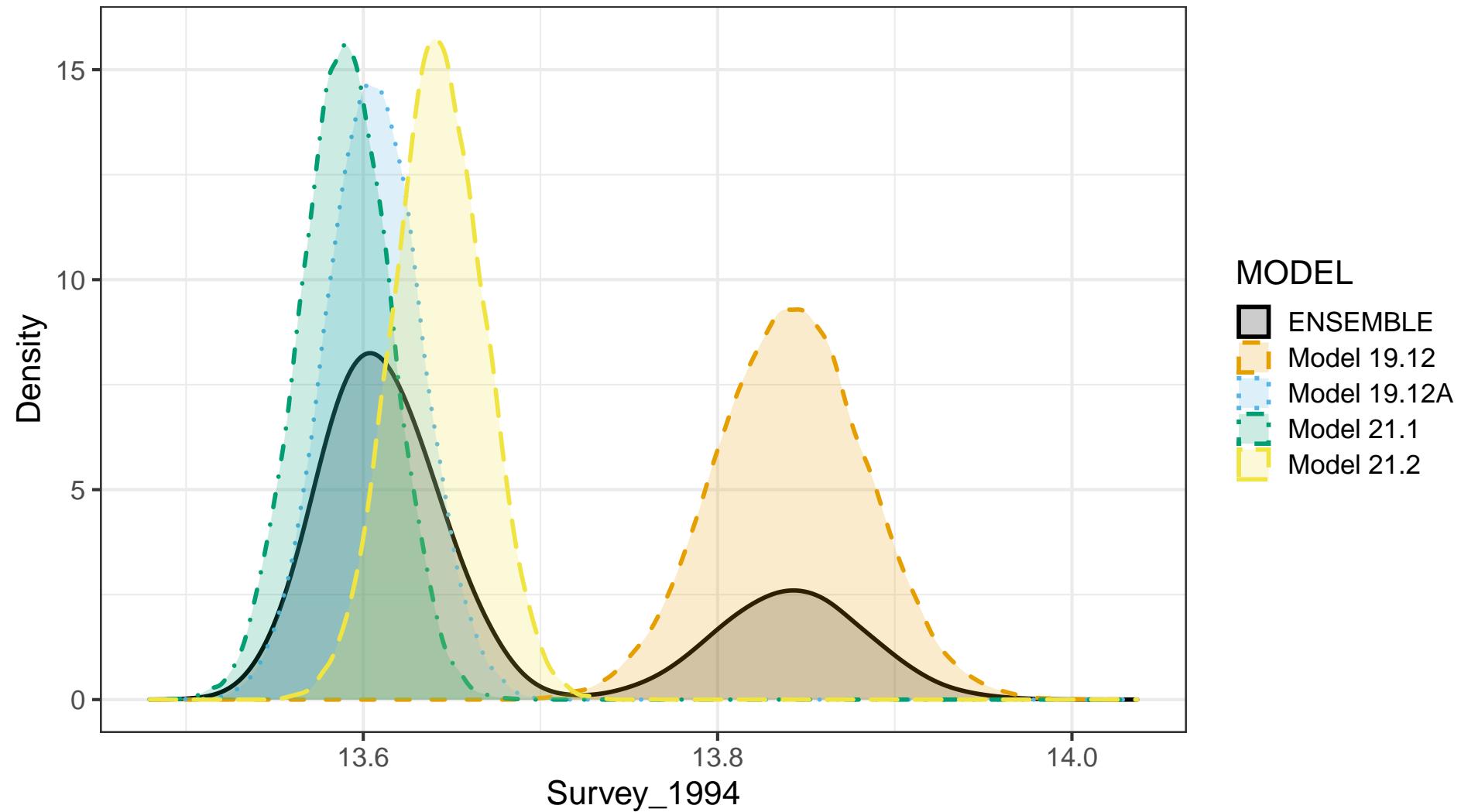
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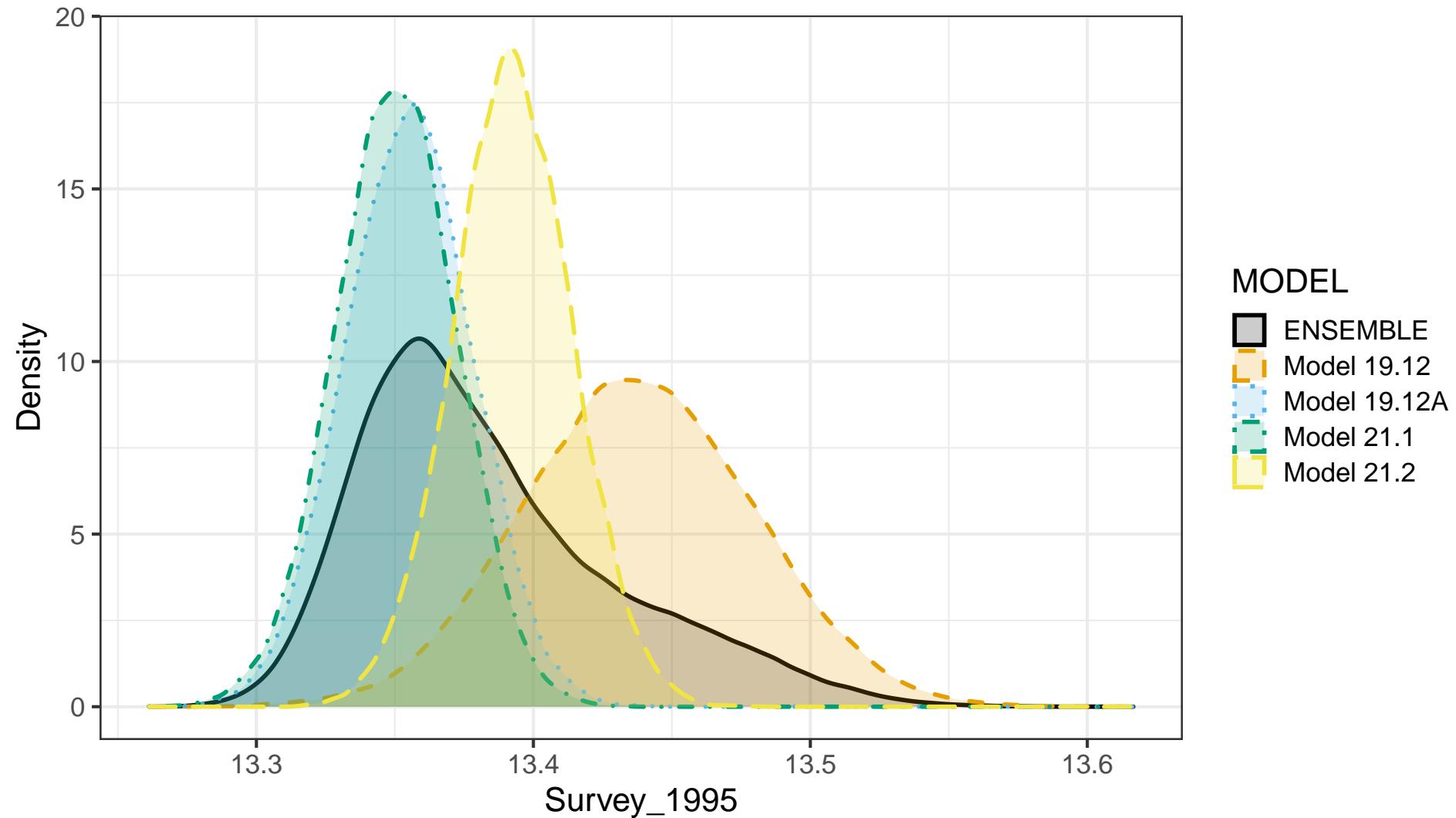
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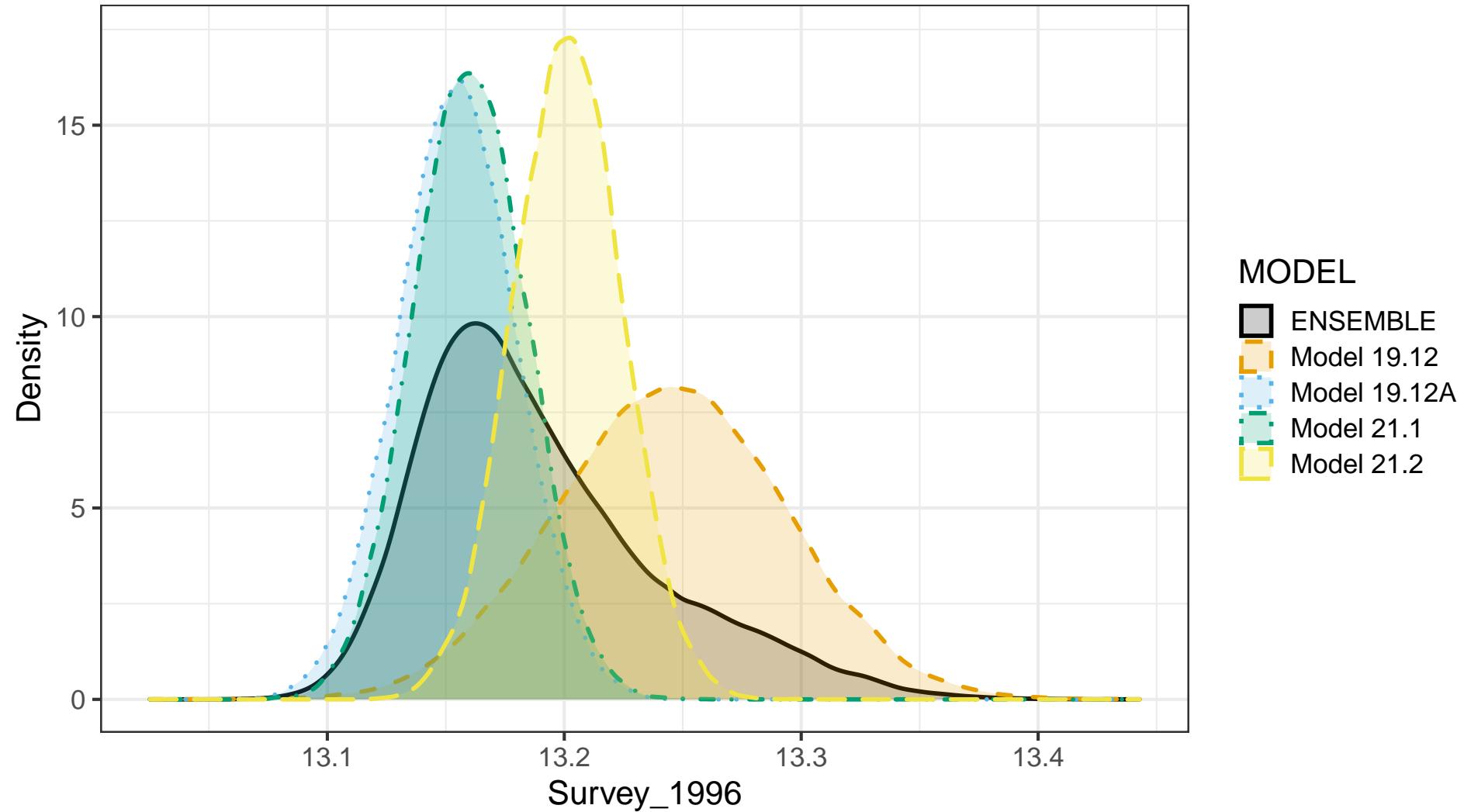
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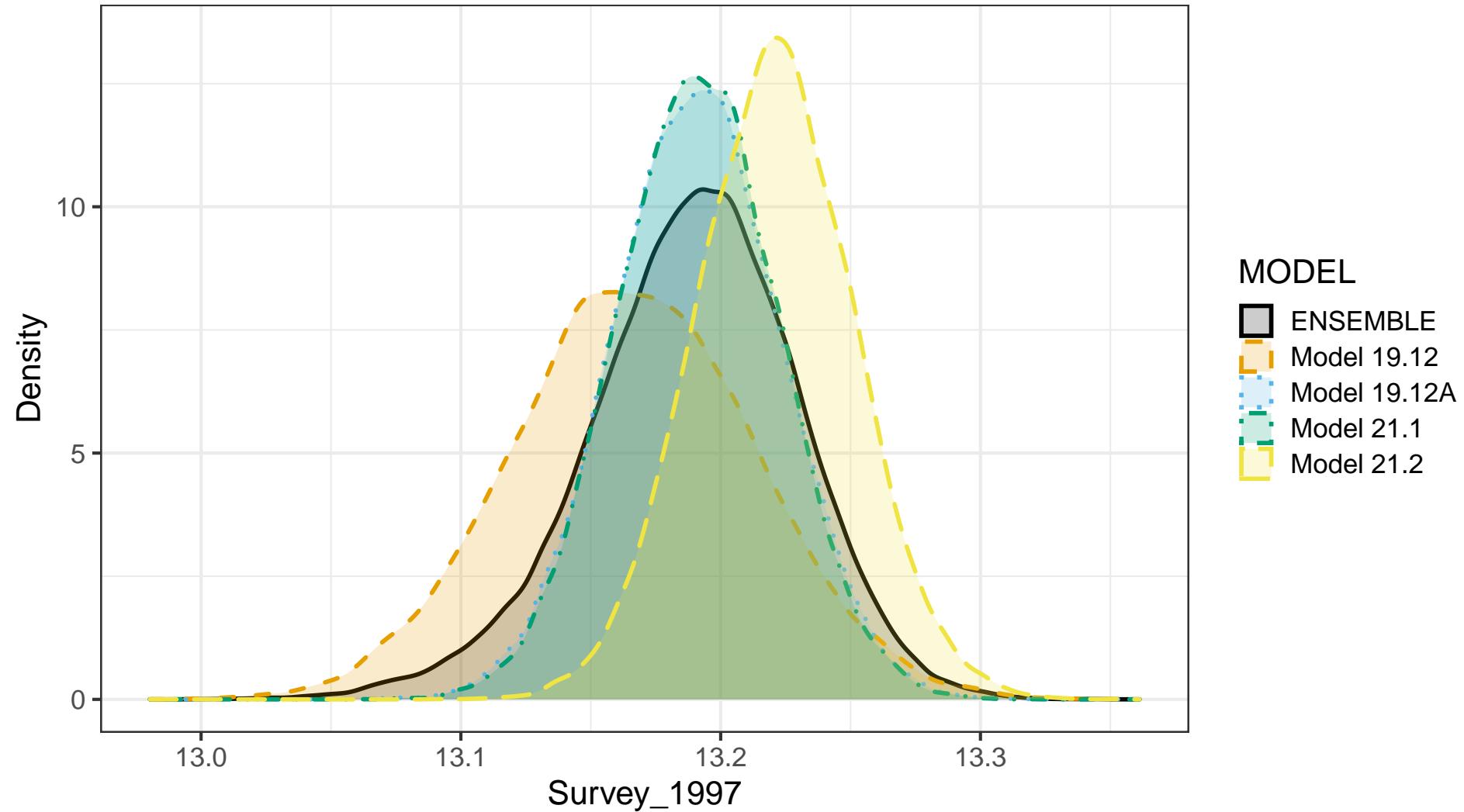
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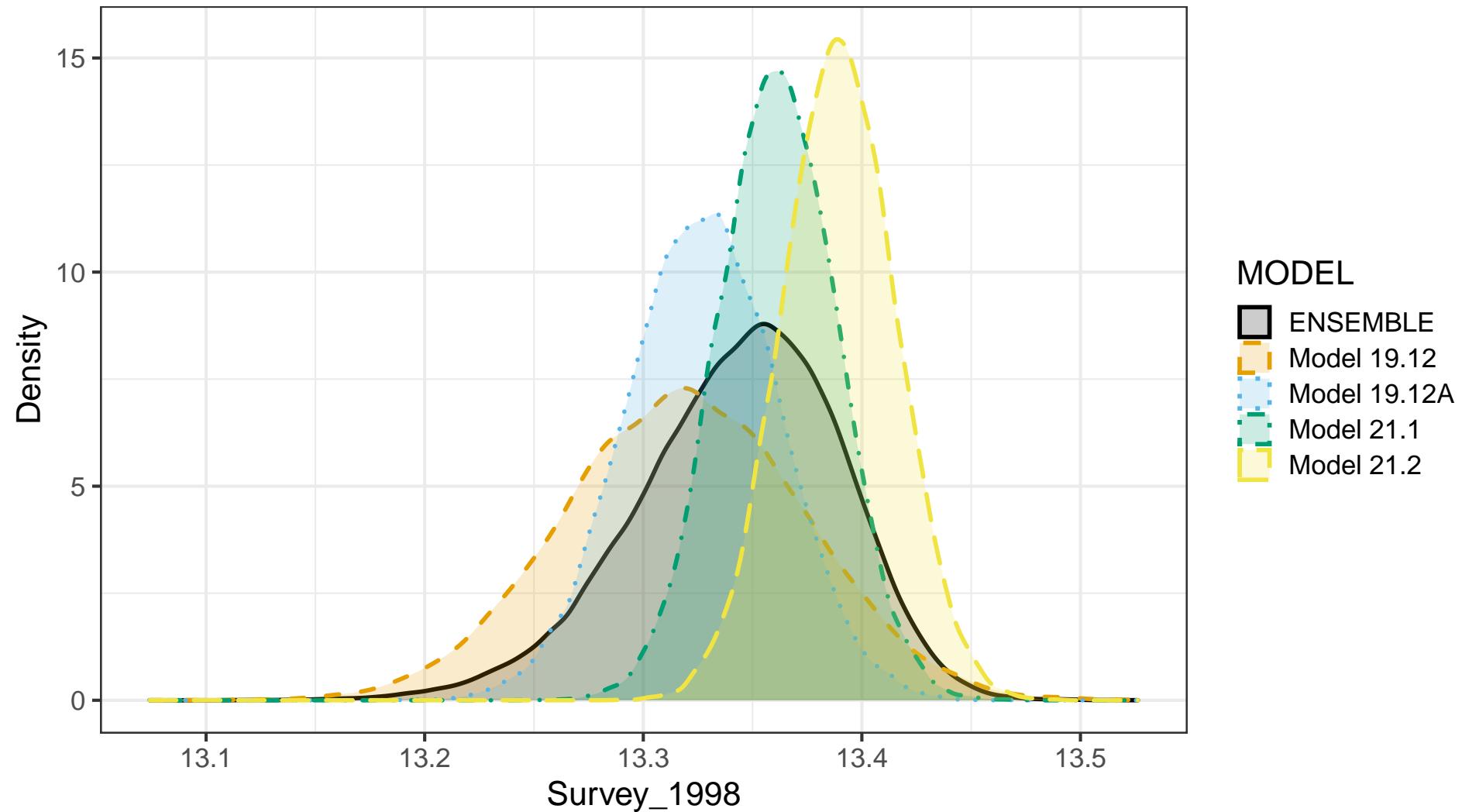
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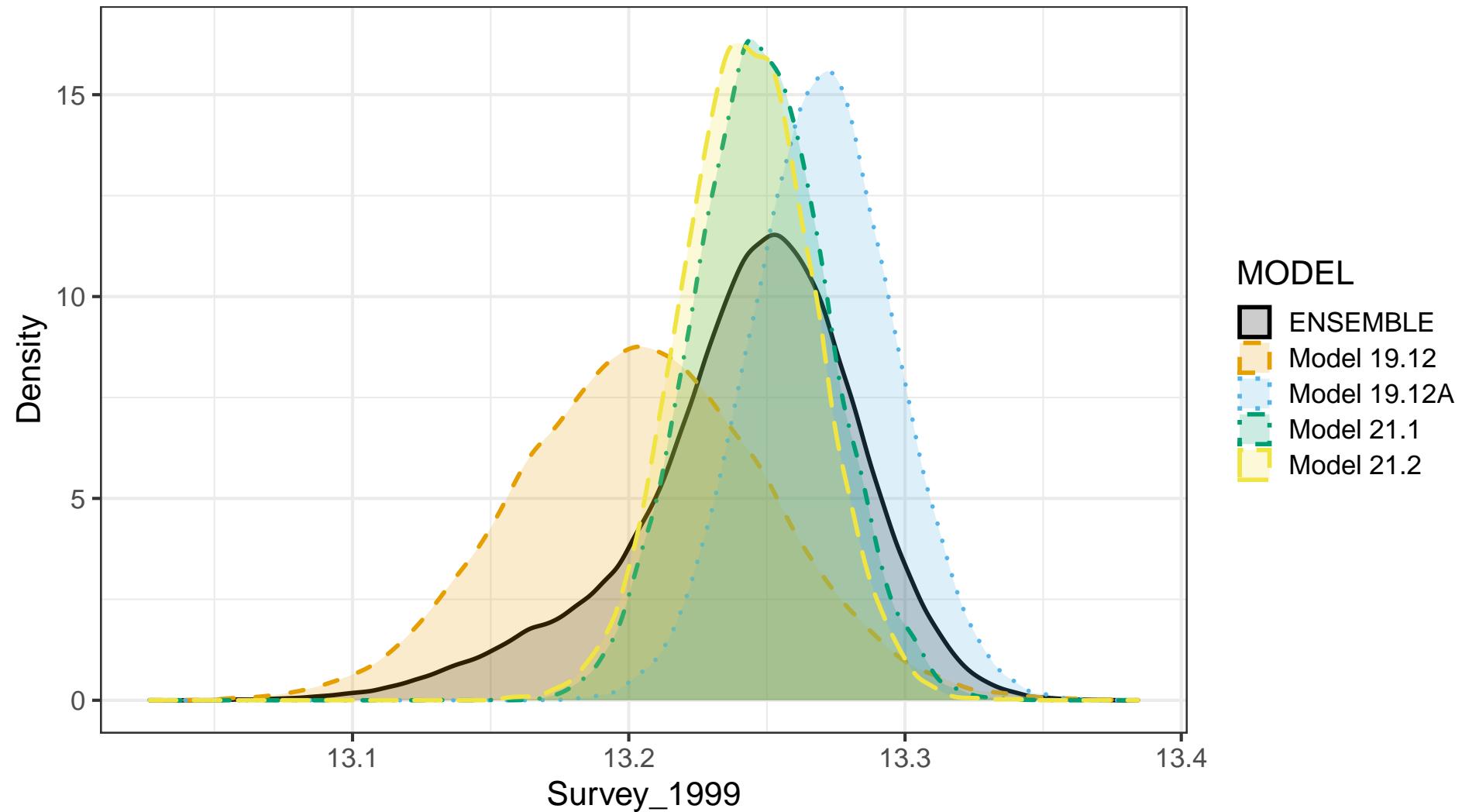
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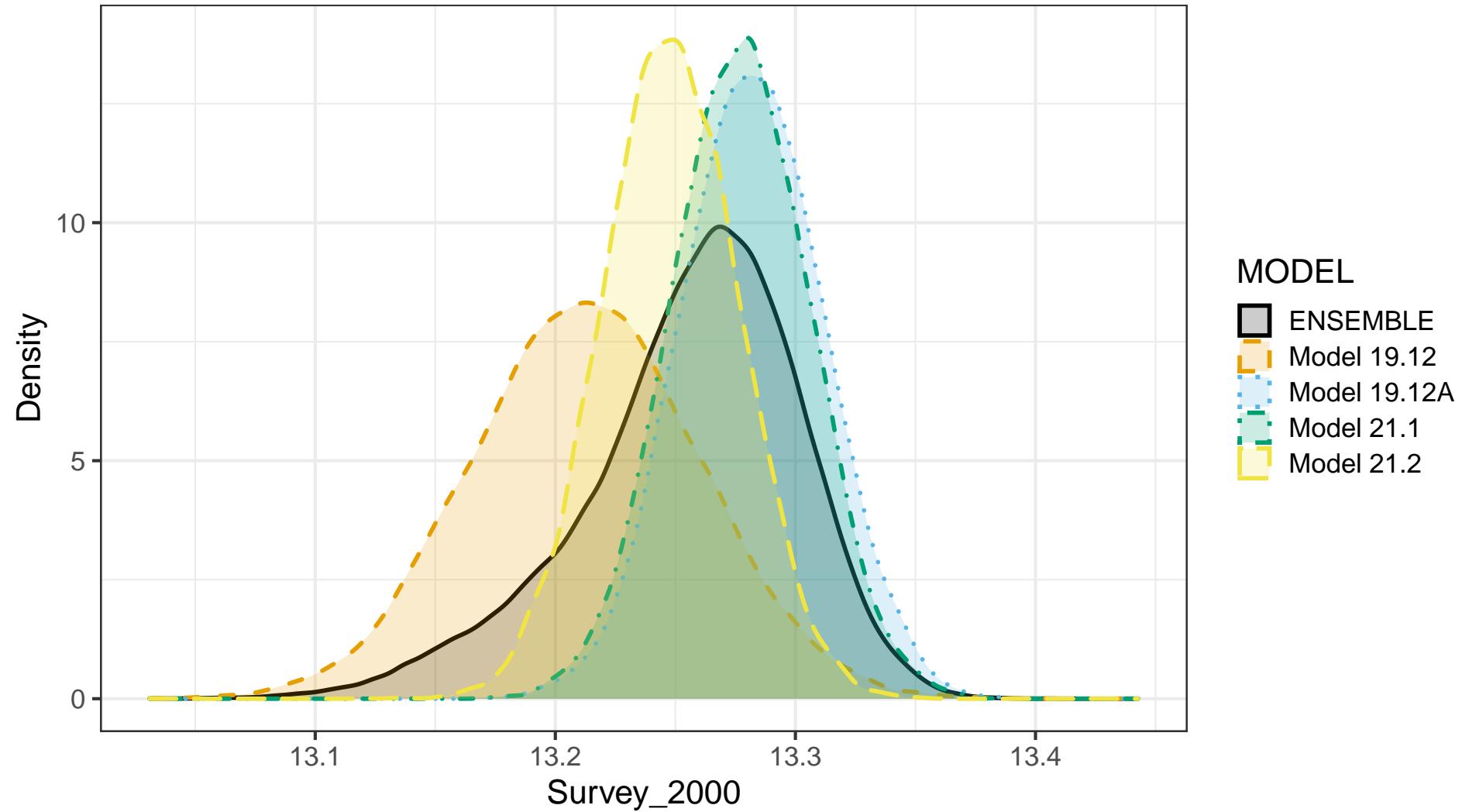
Survey_1998



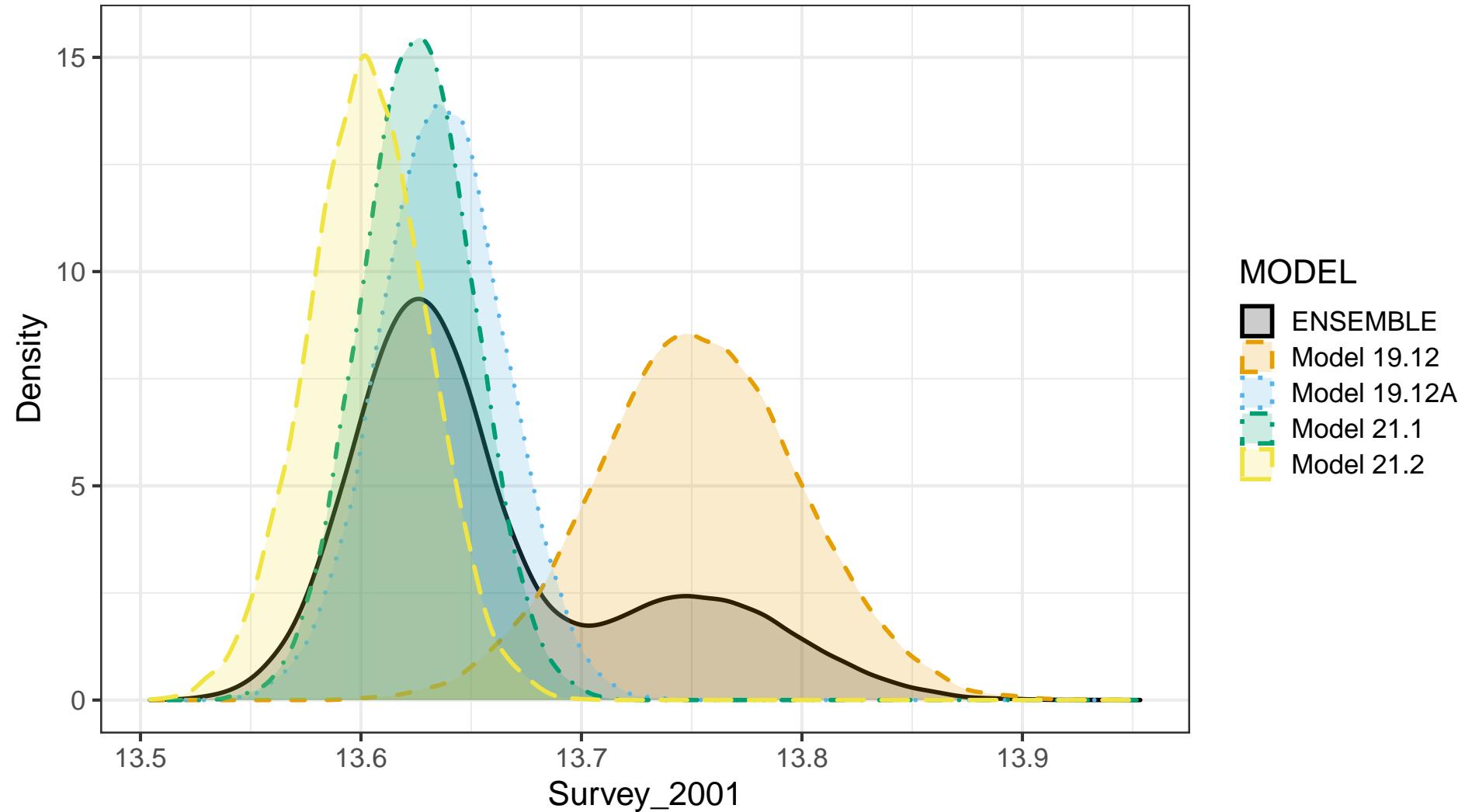
Survey_1999



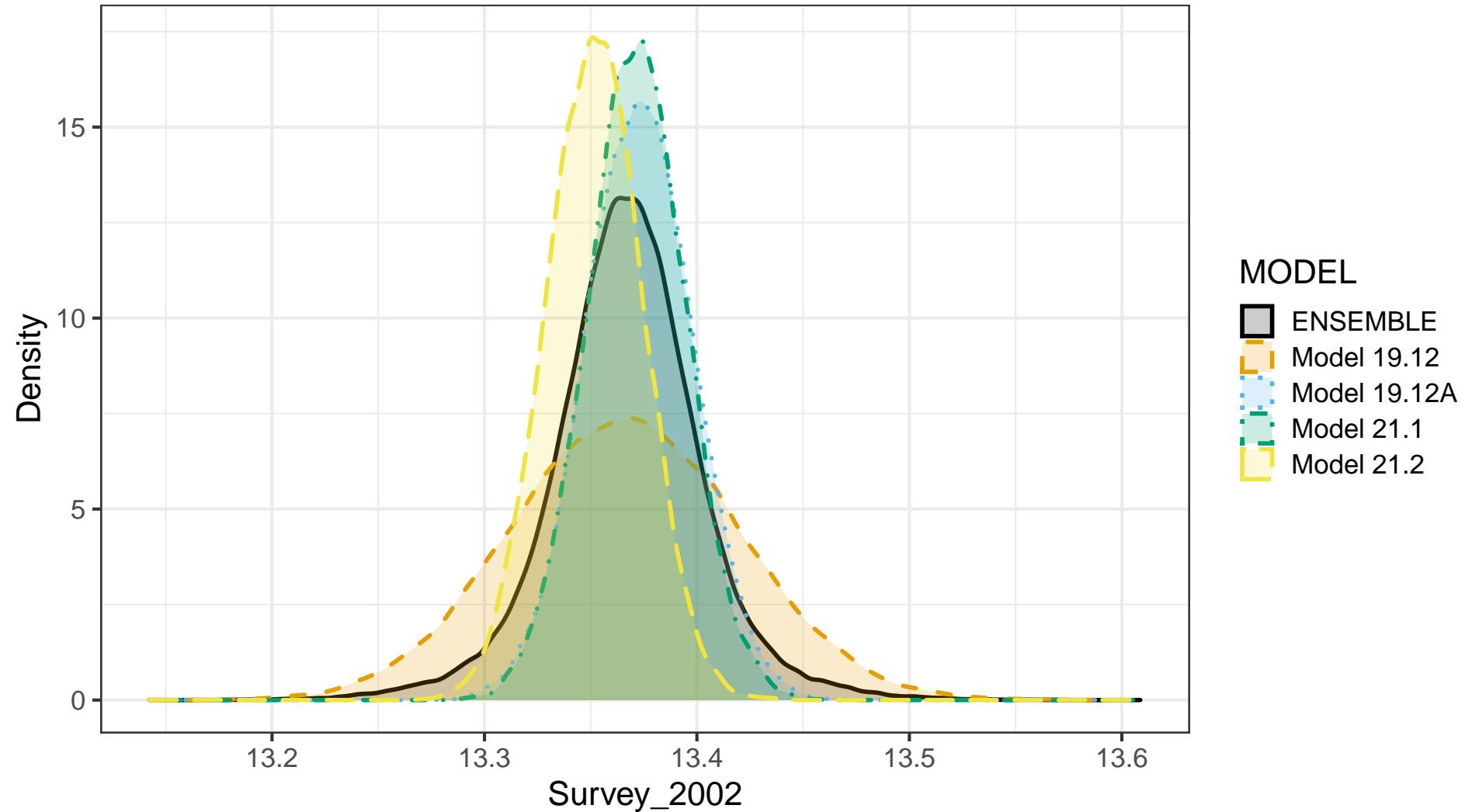
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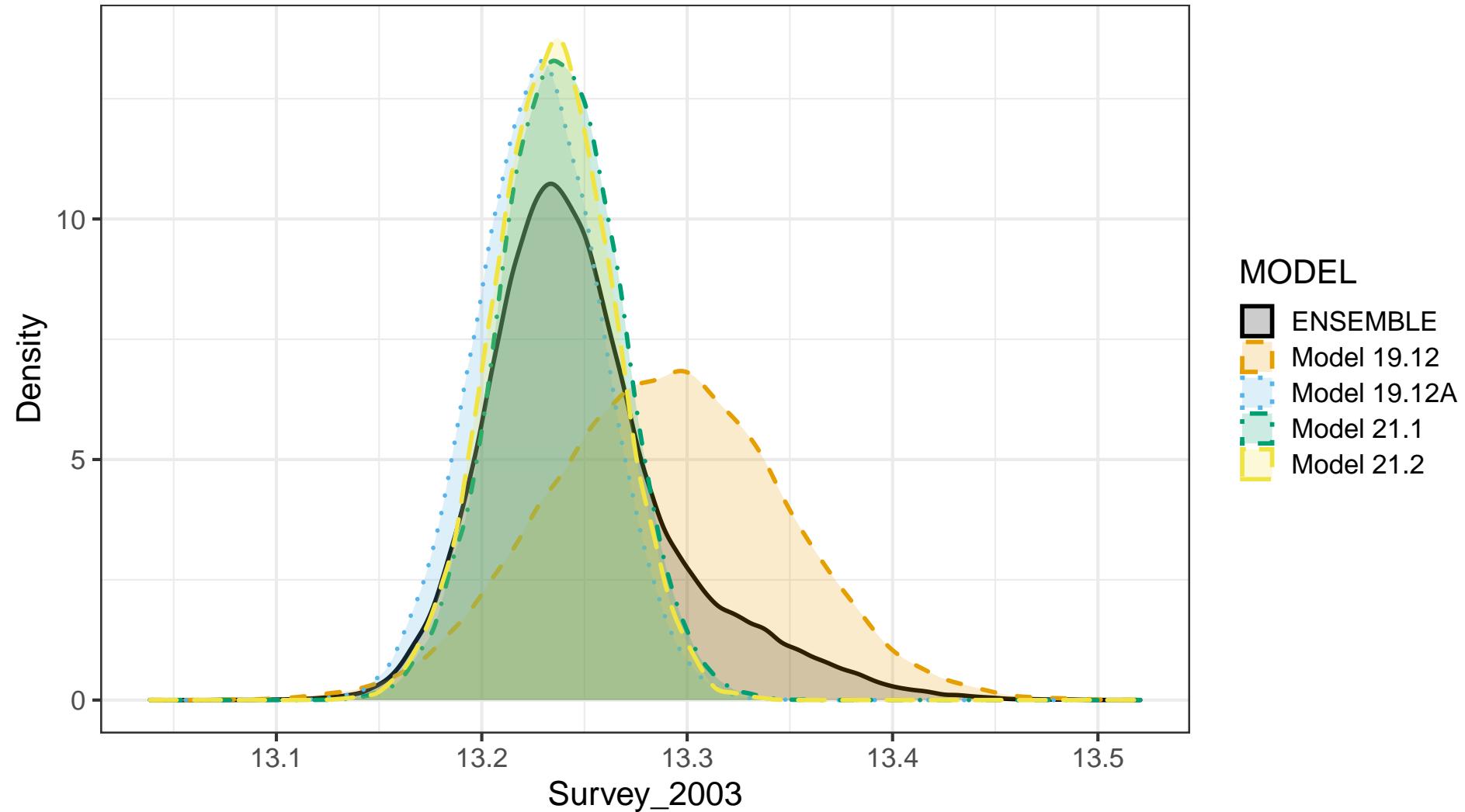
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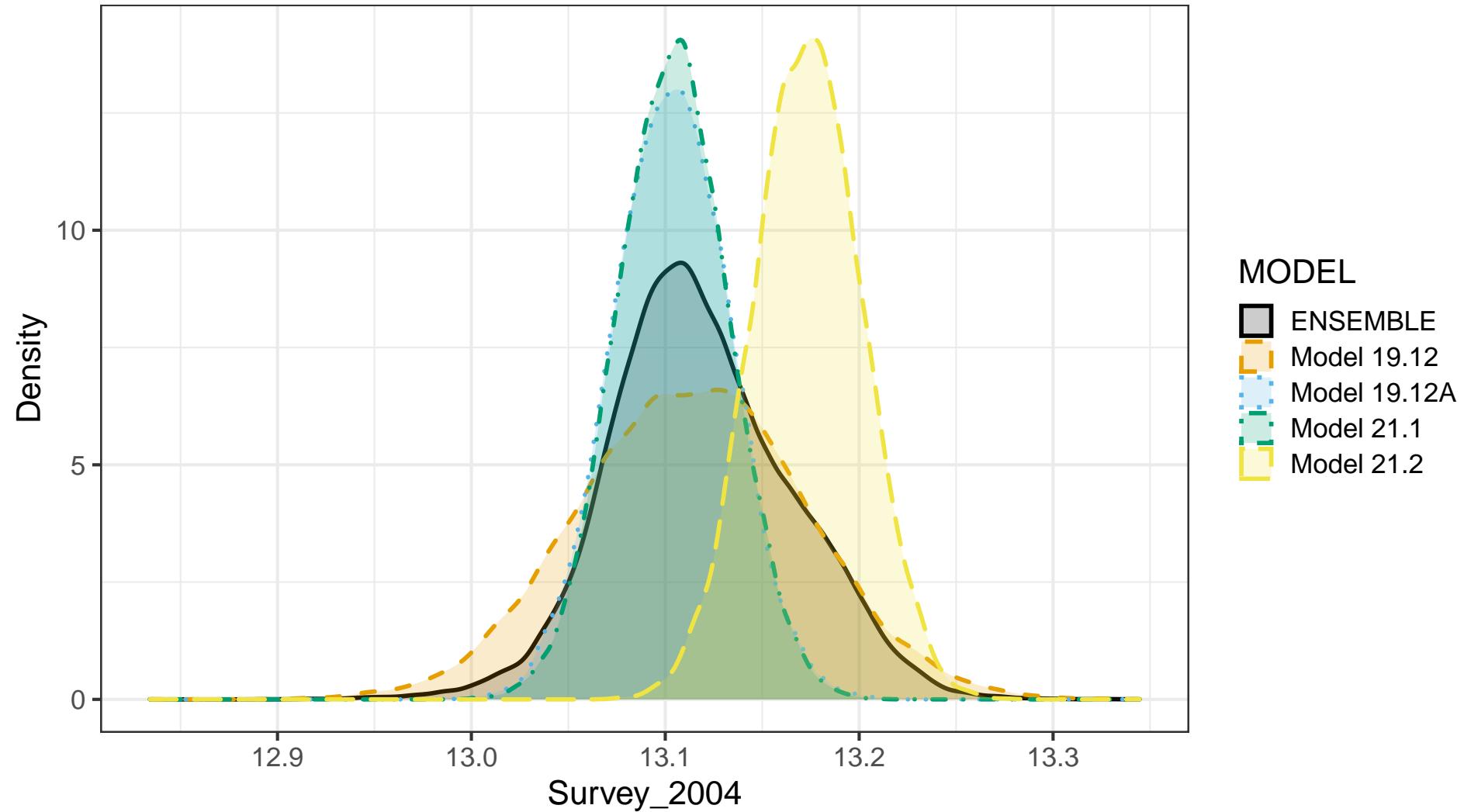
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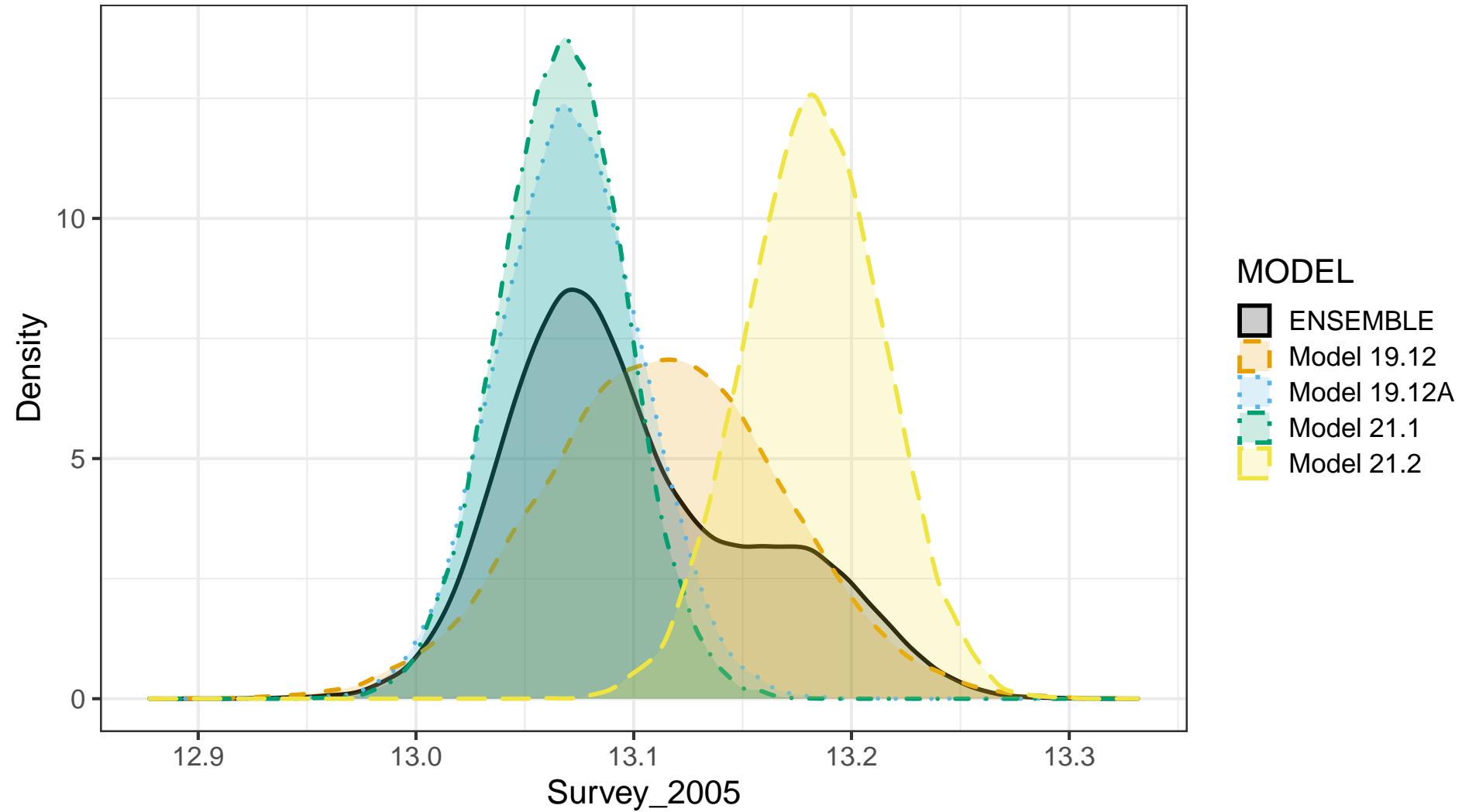
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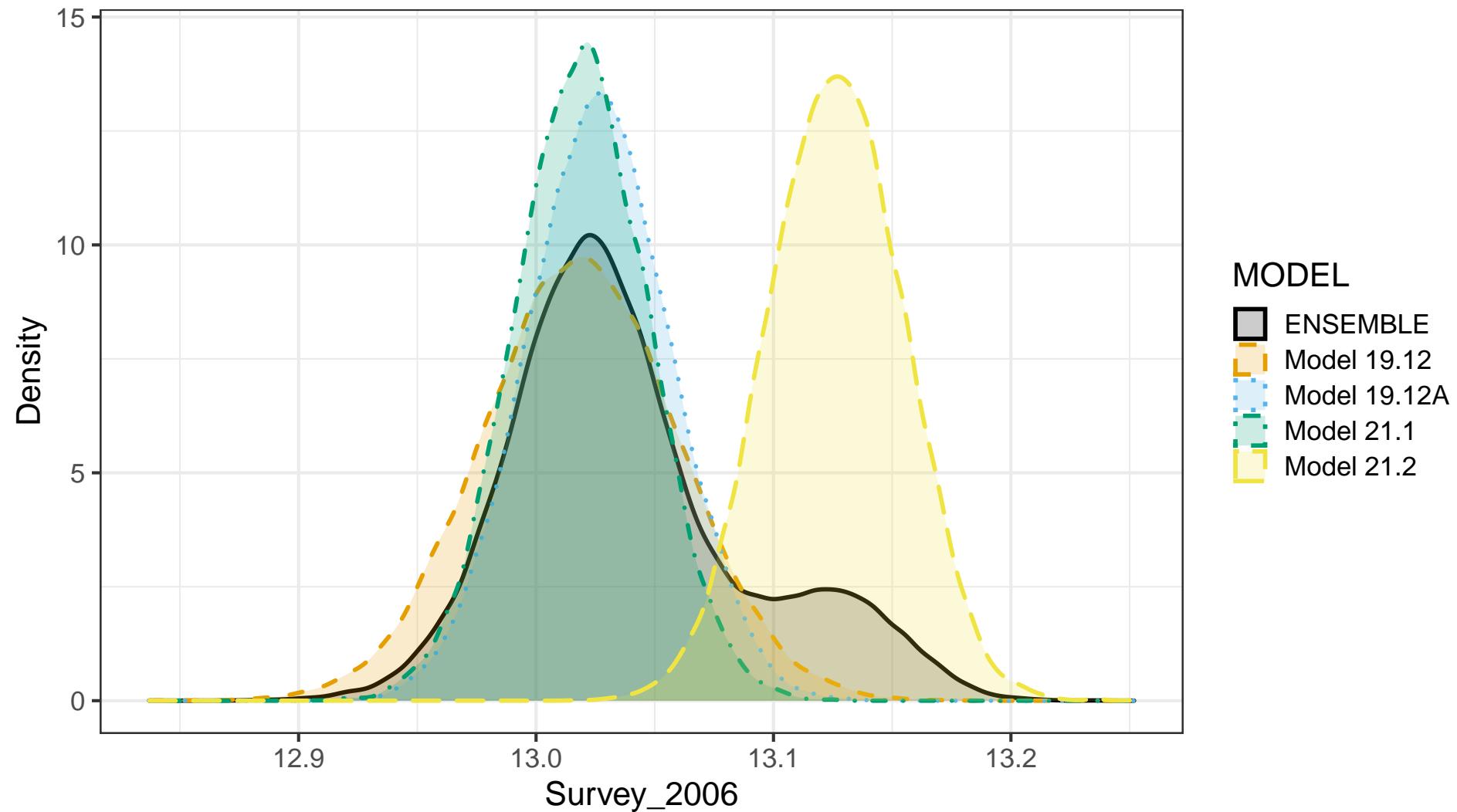
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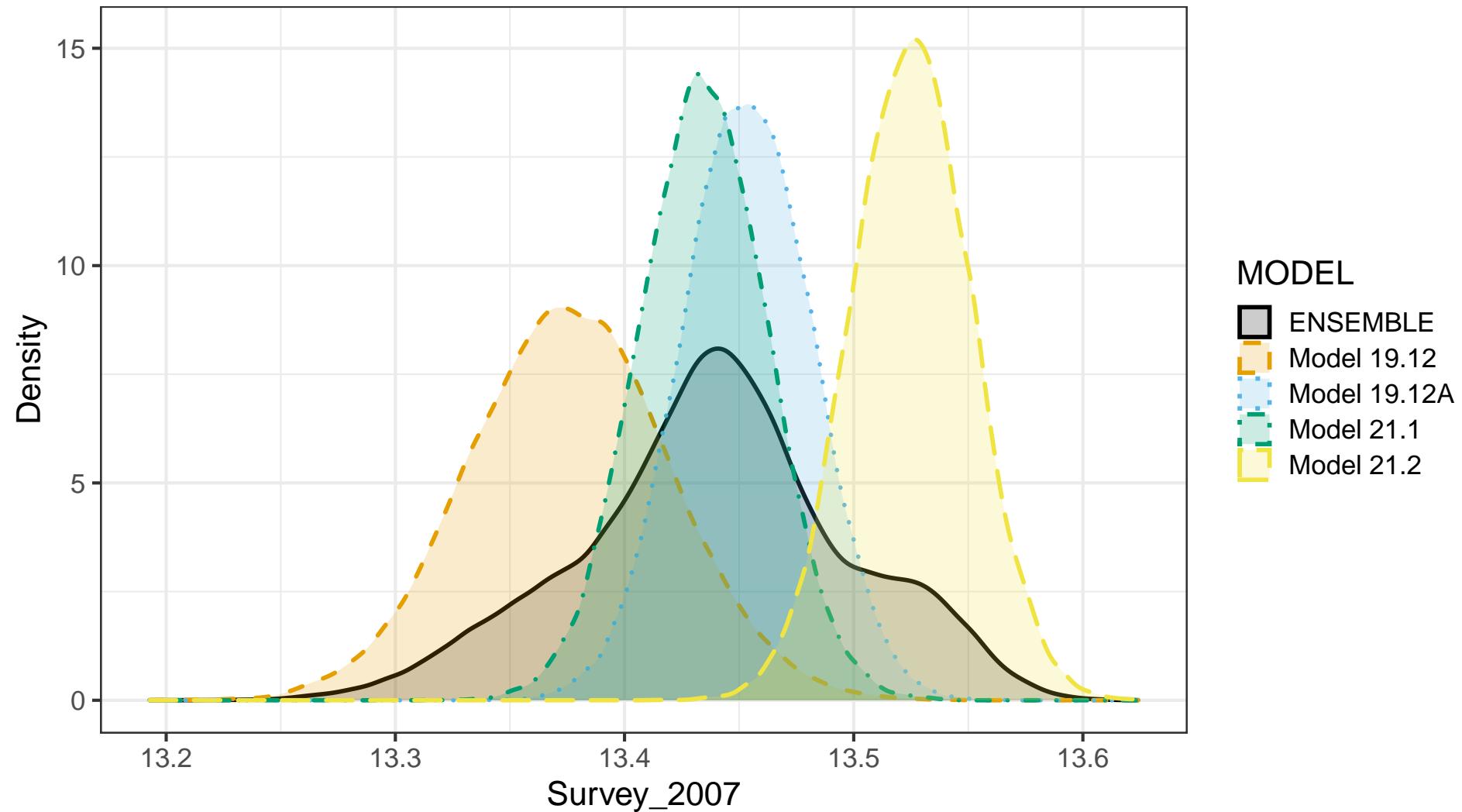
Survey_2005



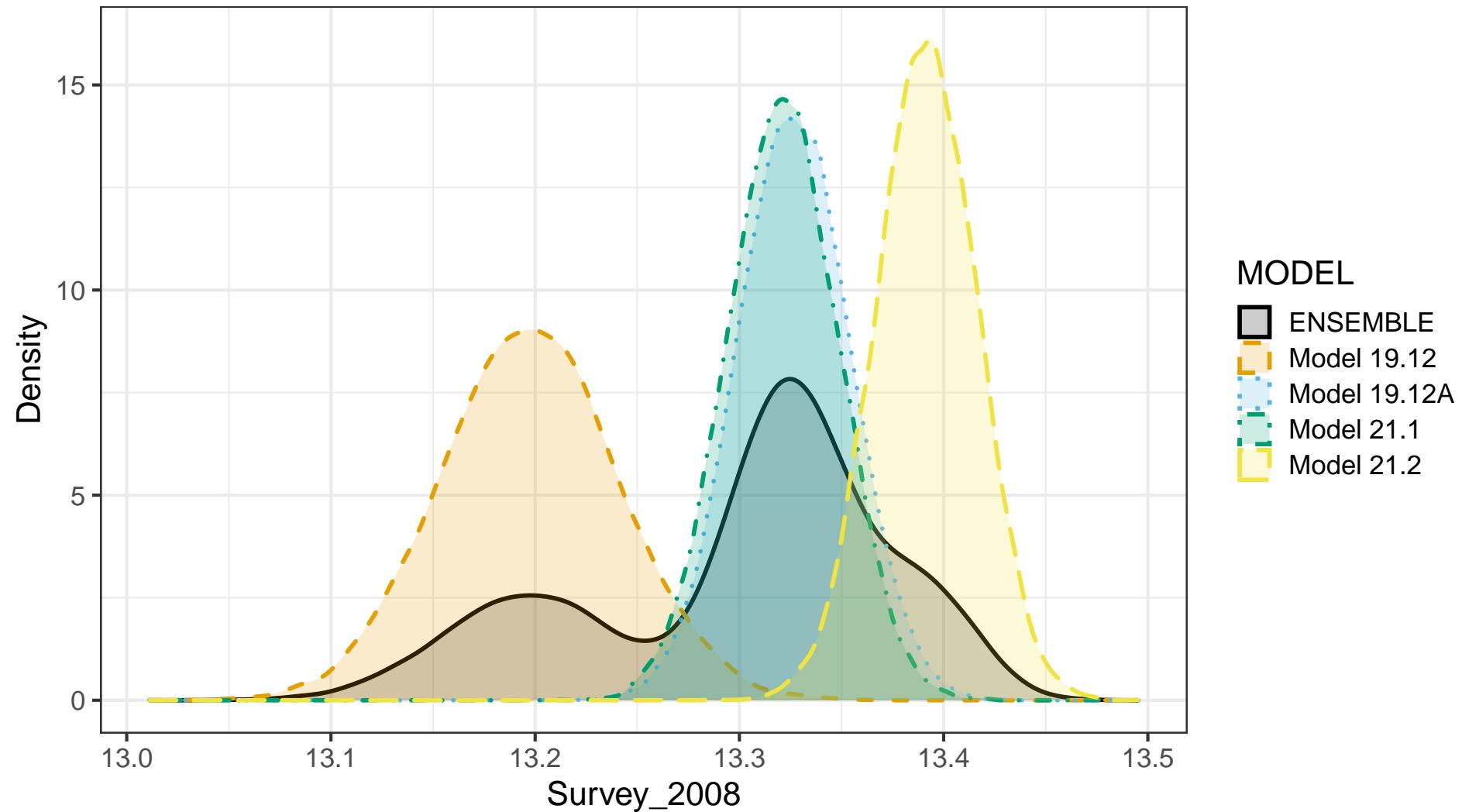
Survey_2006



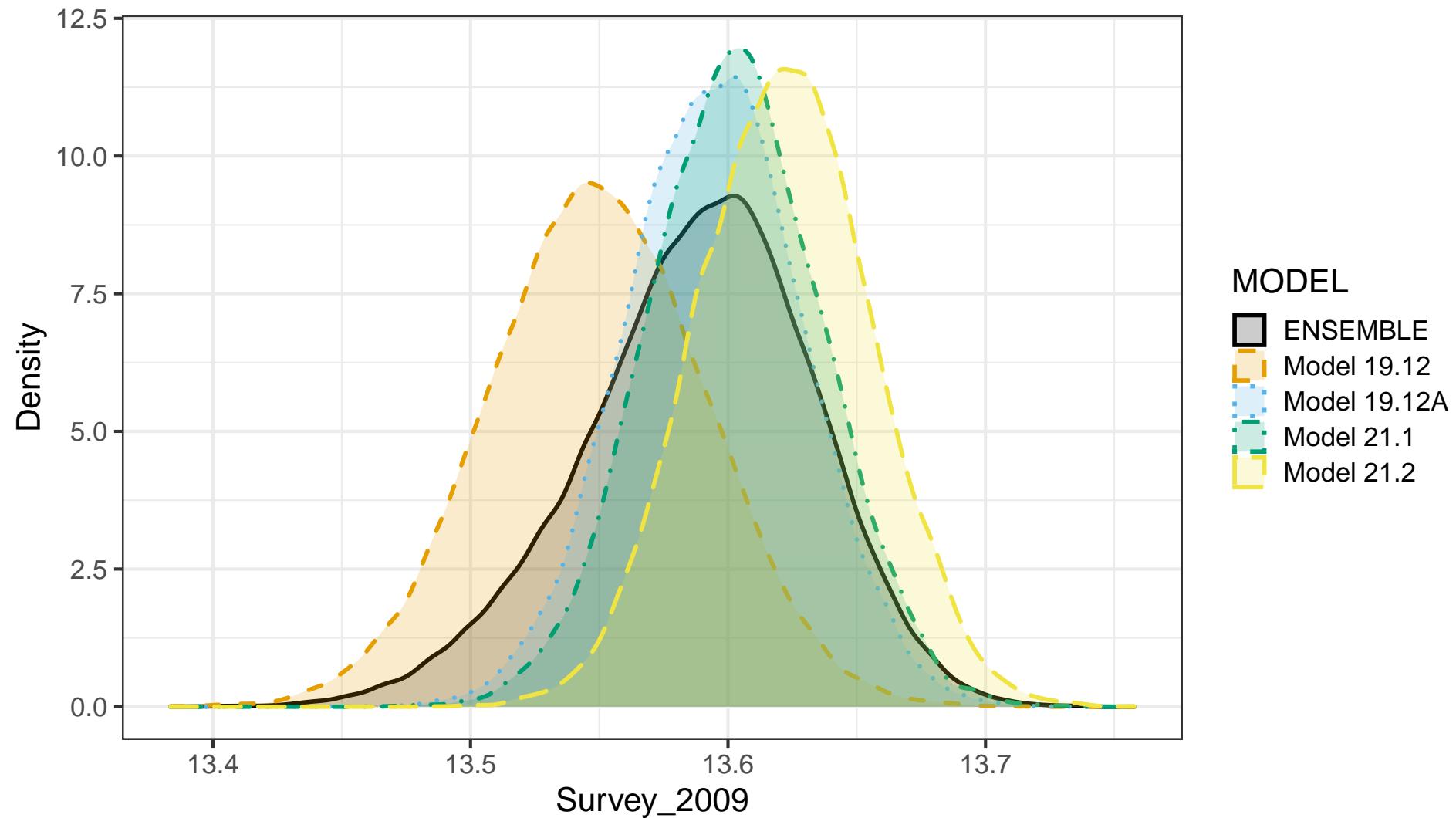
Survey_2007



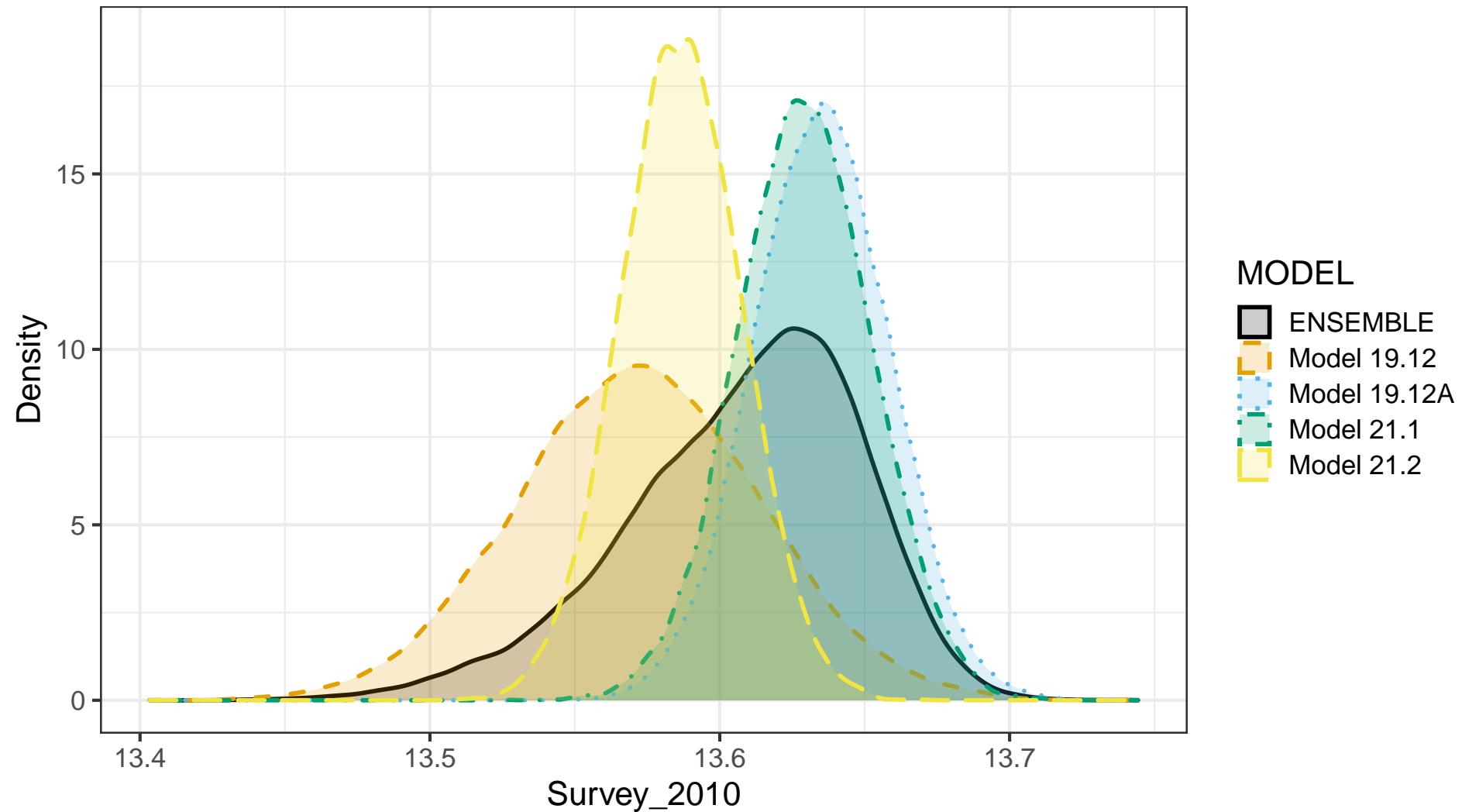
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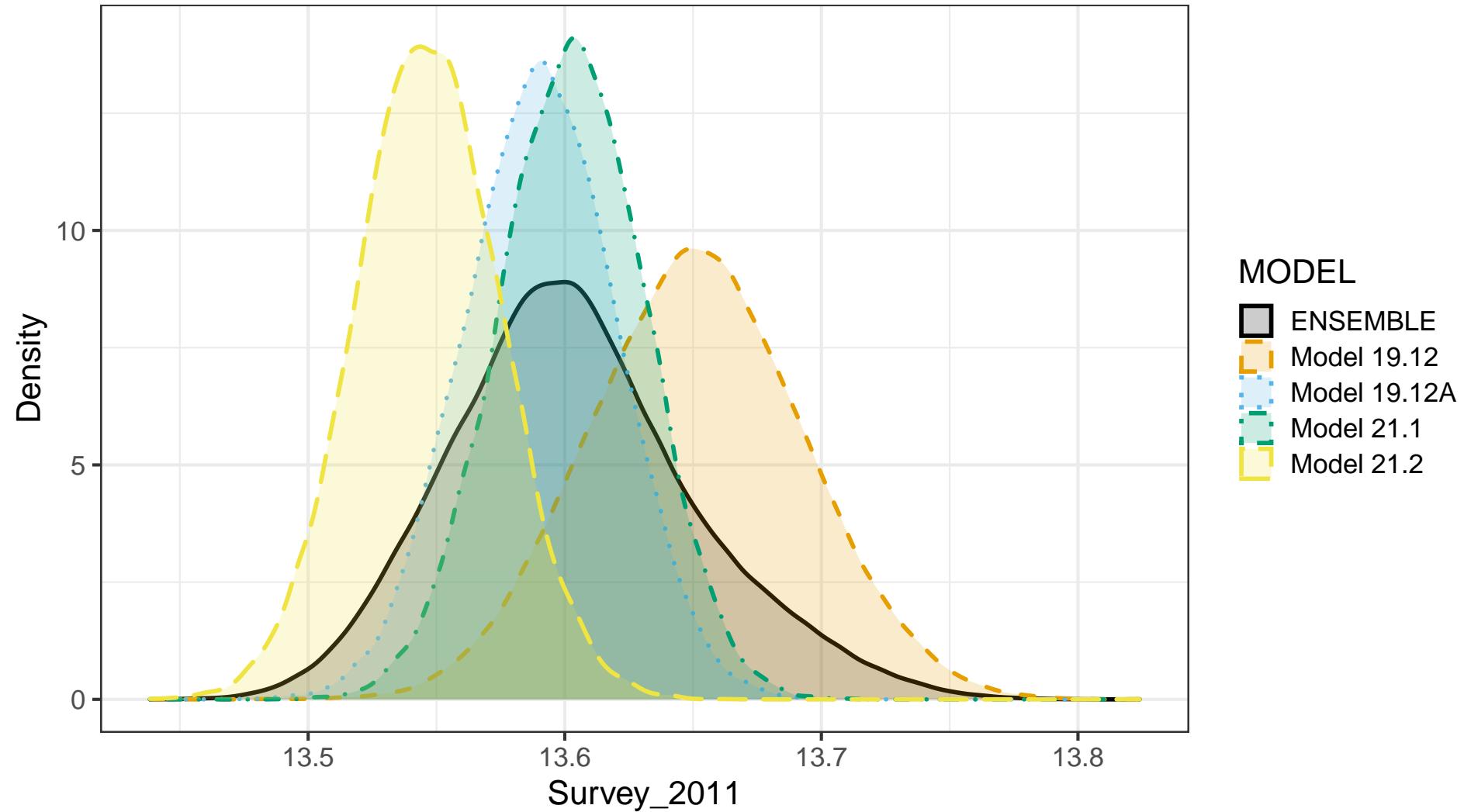
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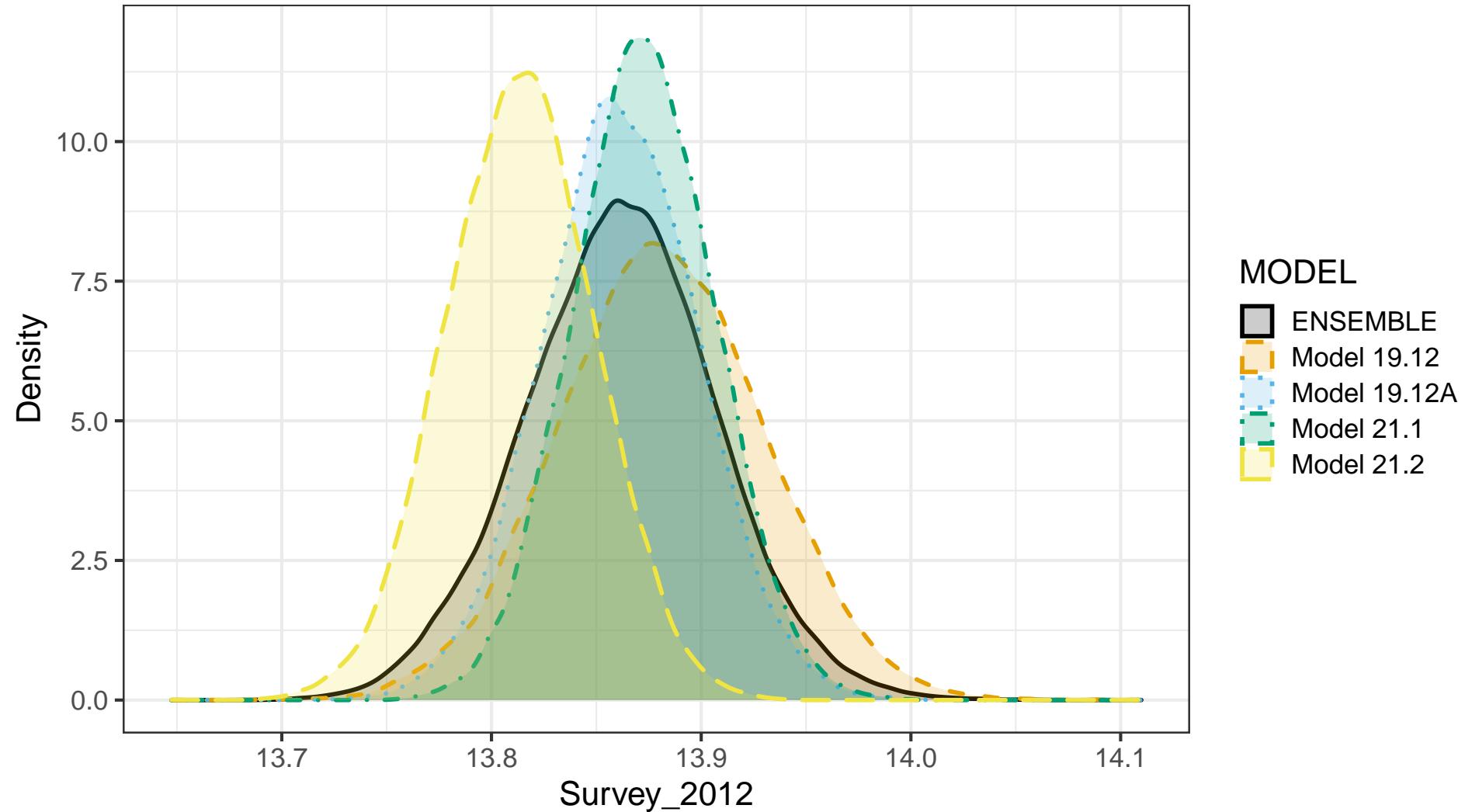
Survey_2010



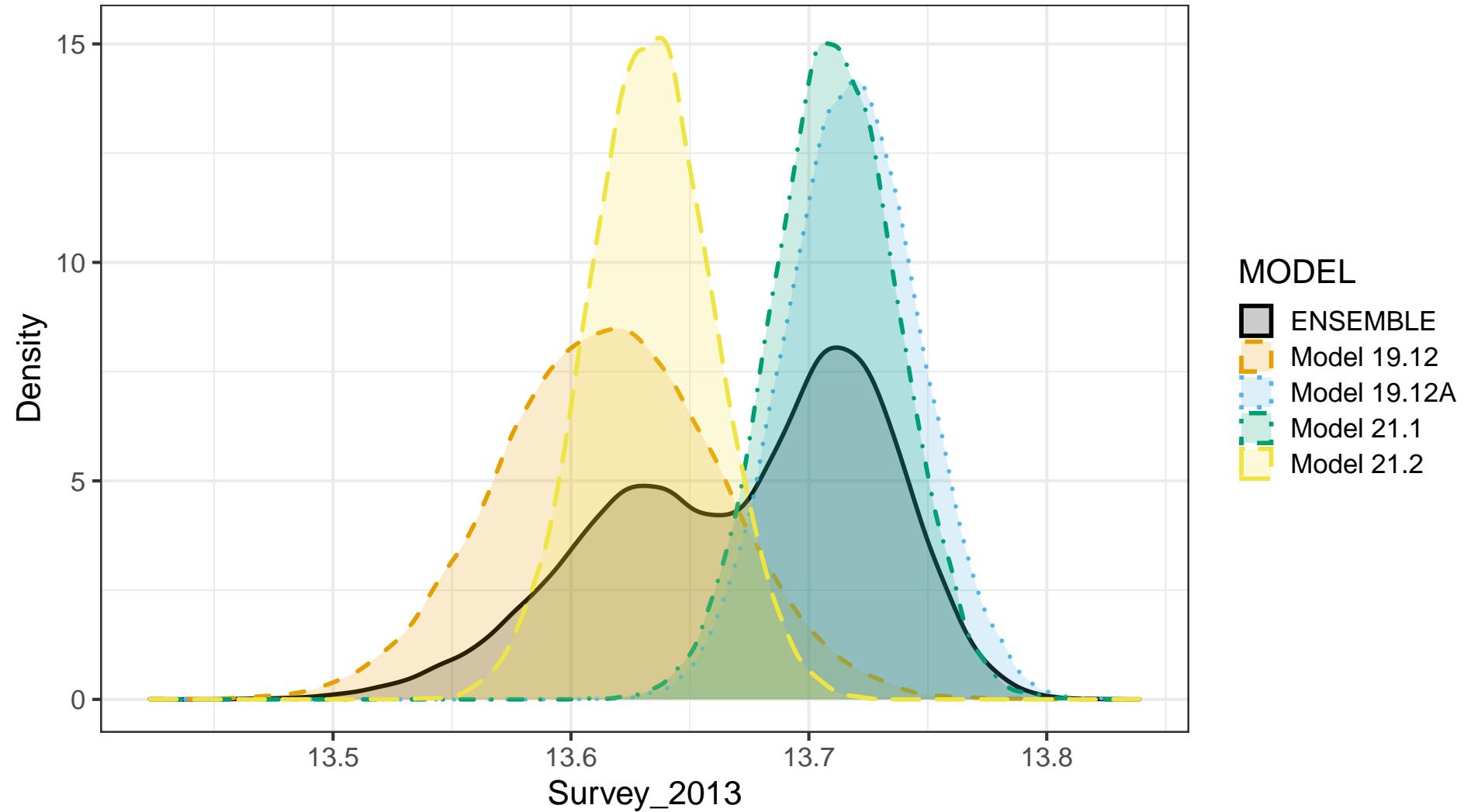
Survey_2011



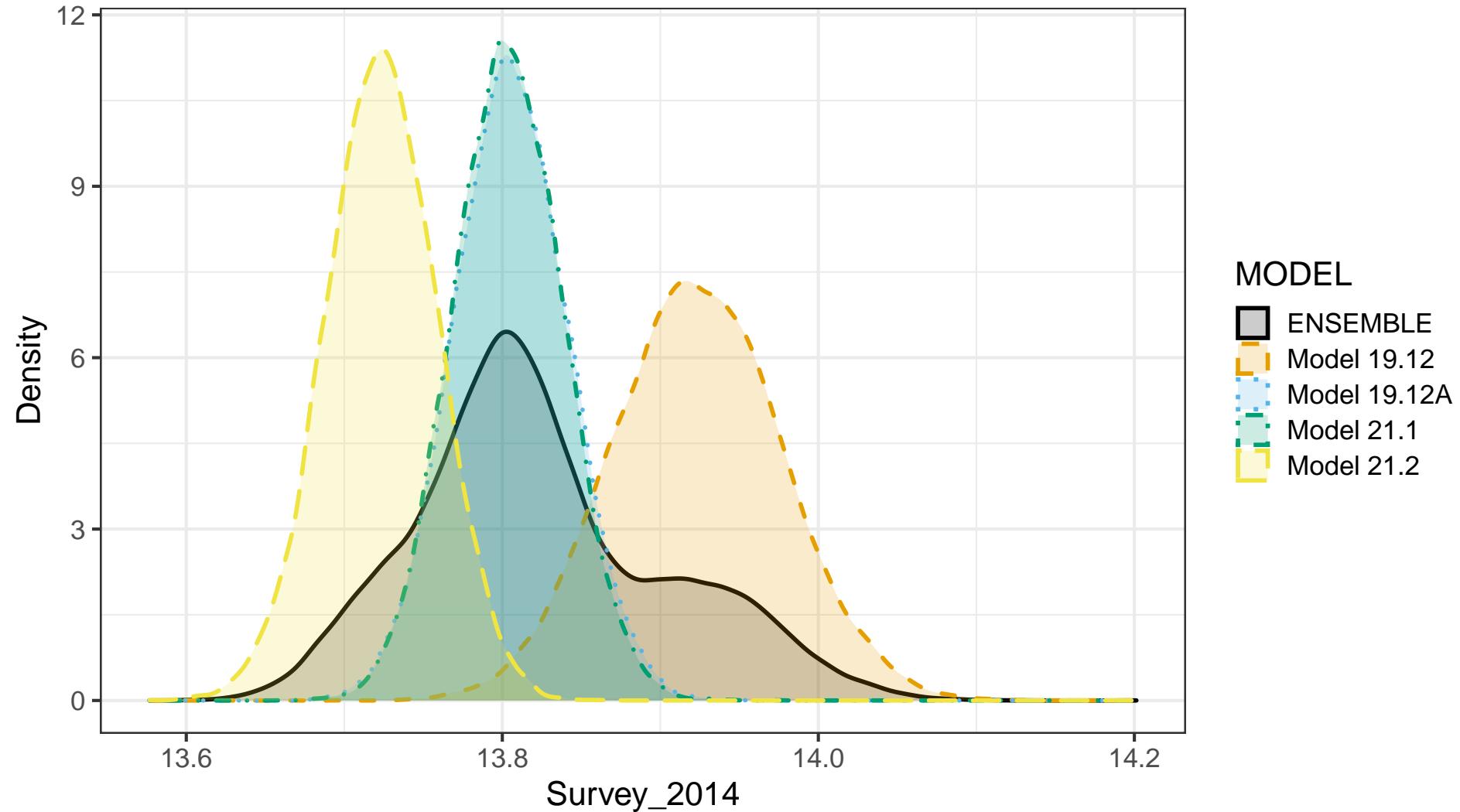
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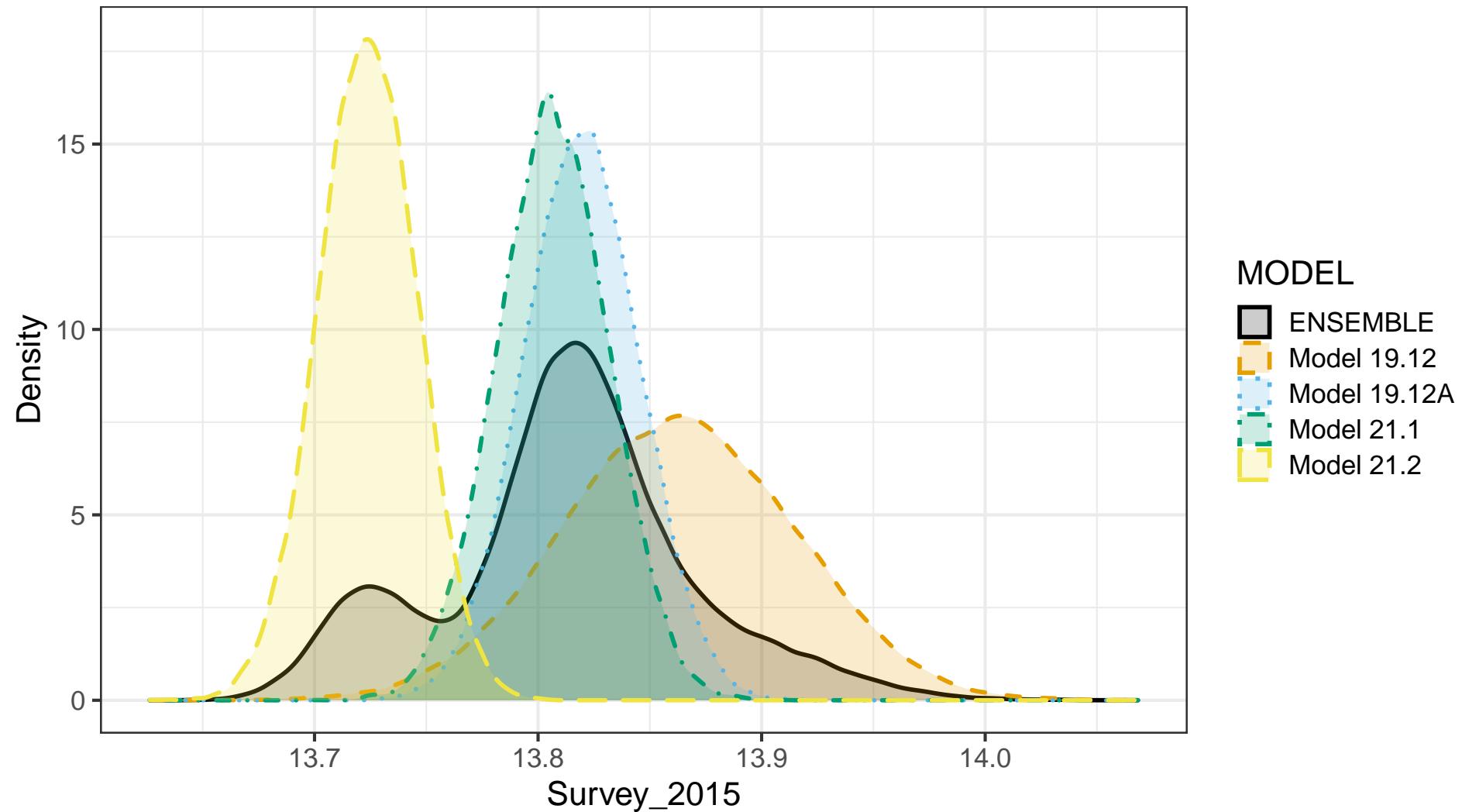
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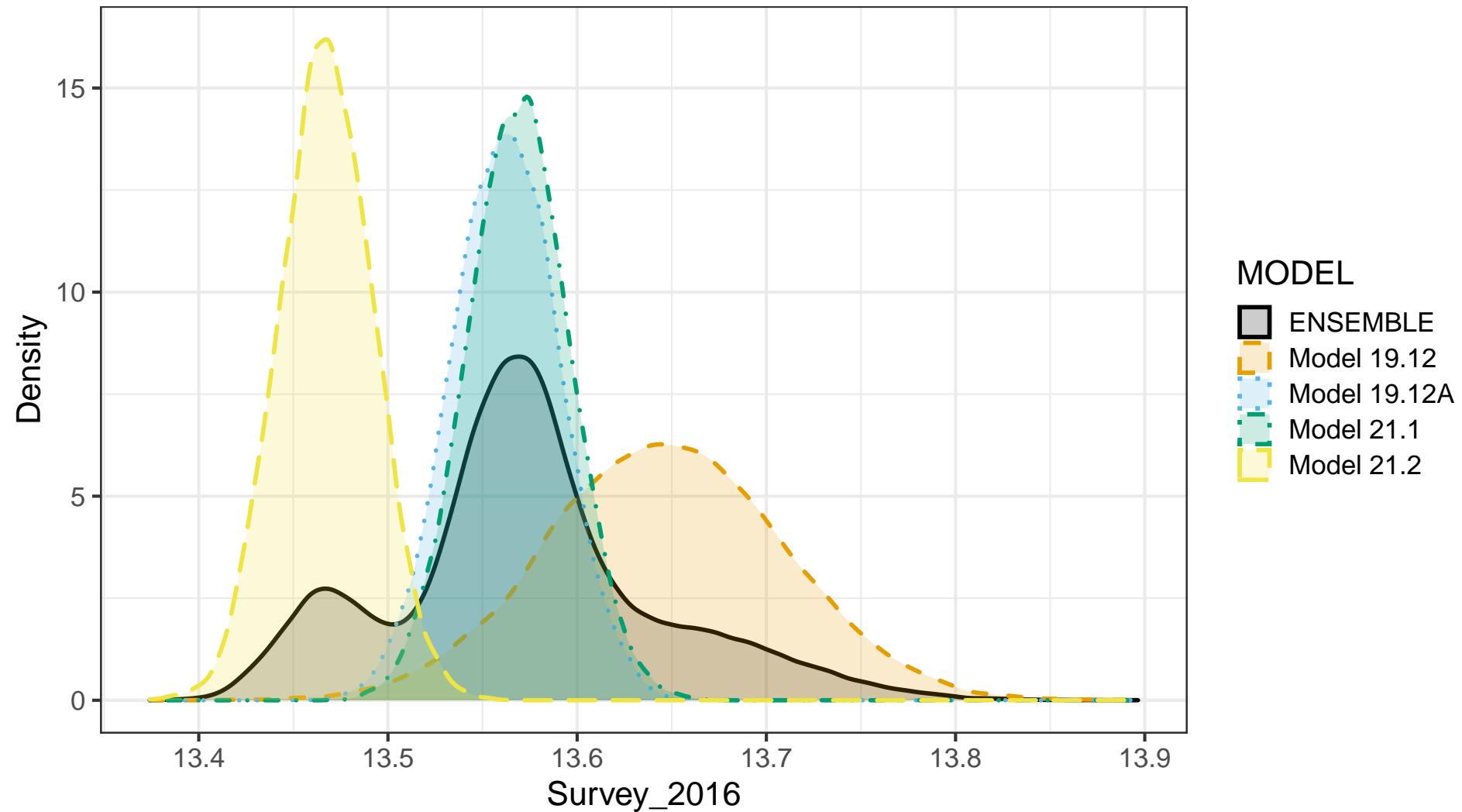
Survey_2014



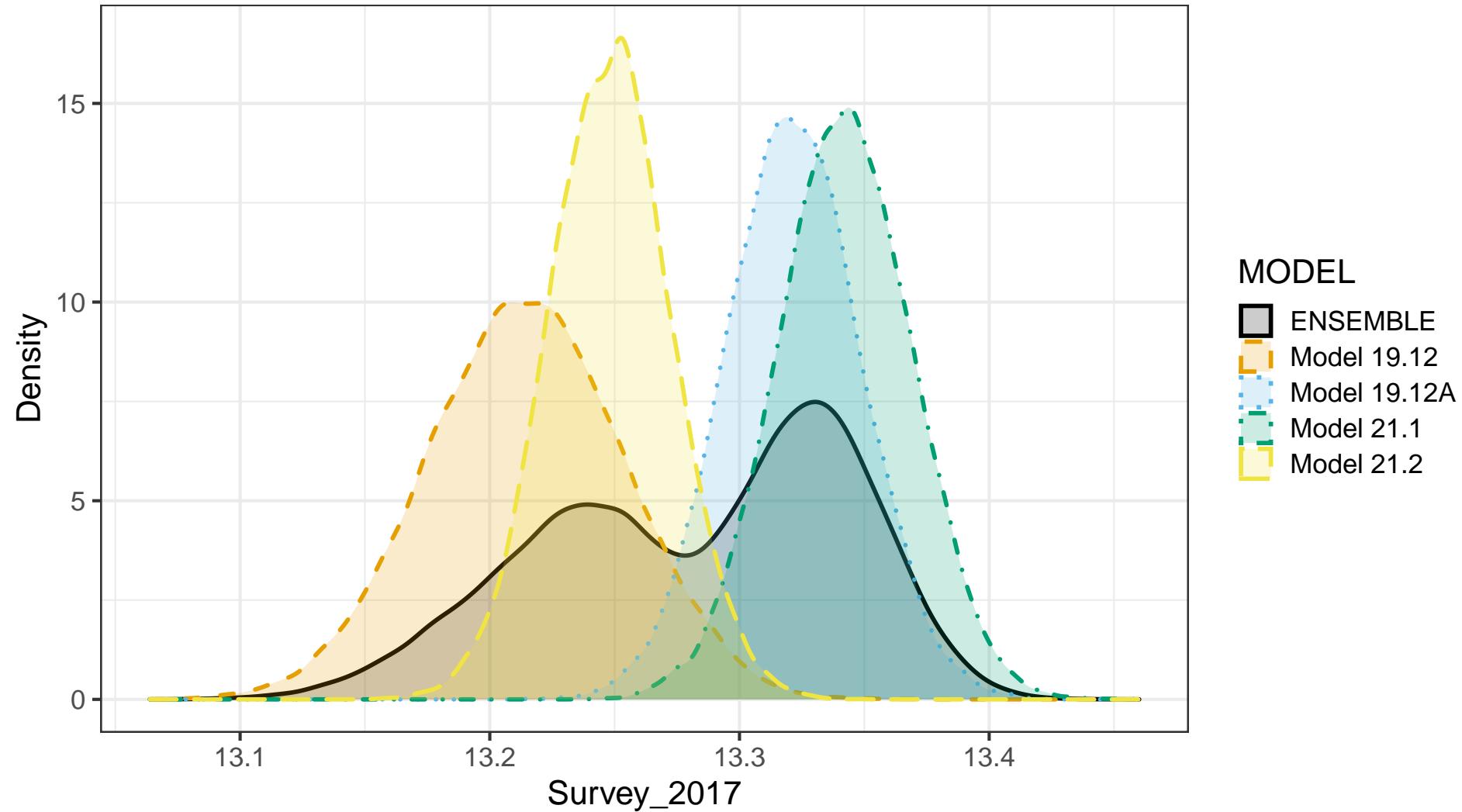
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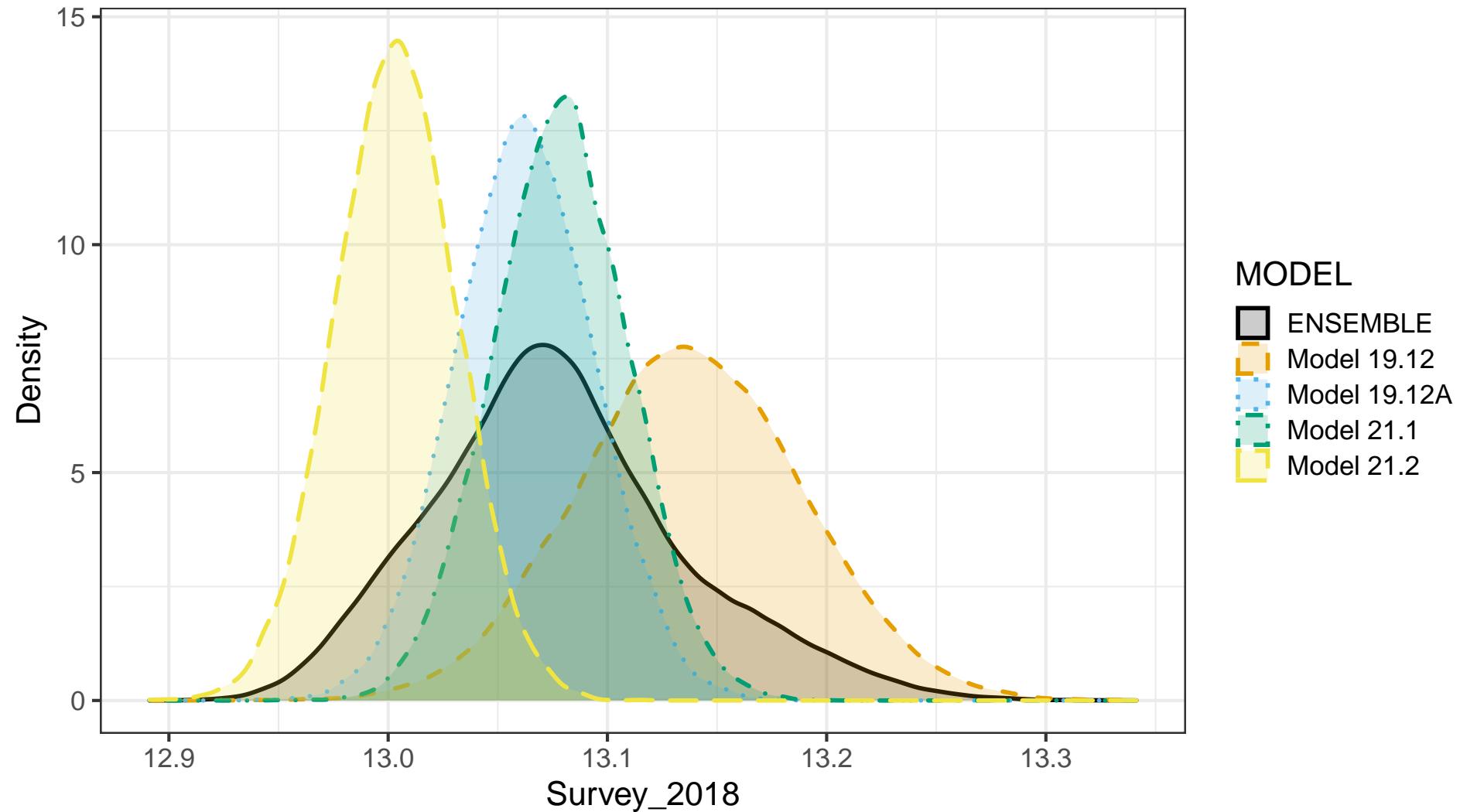
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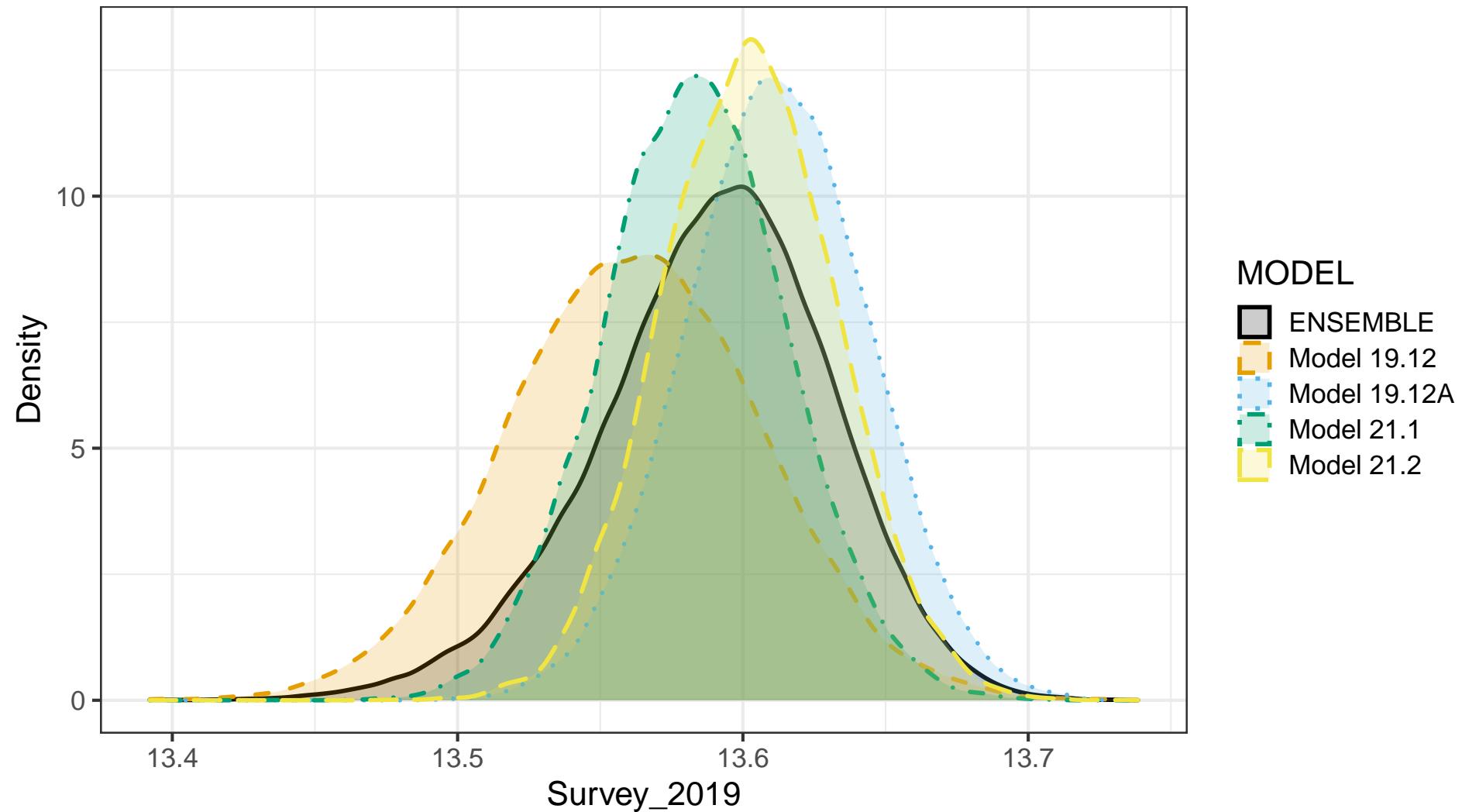
Survey_2017



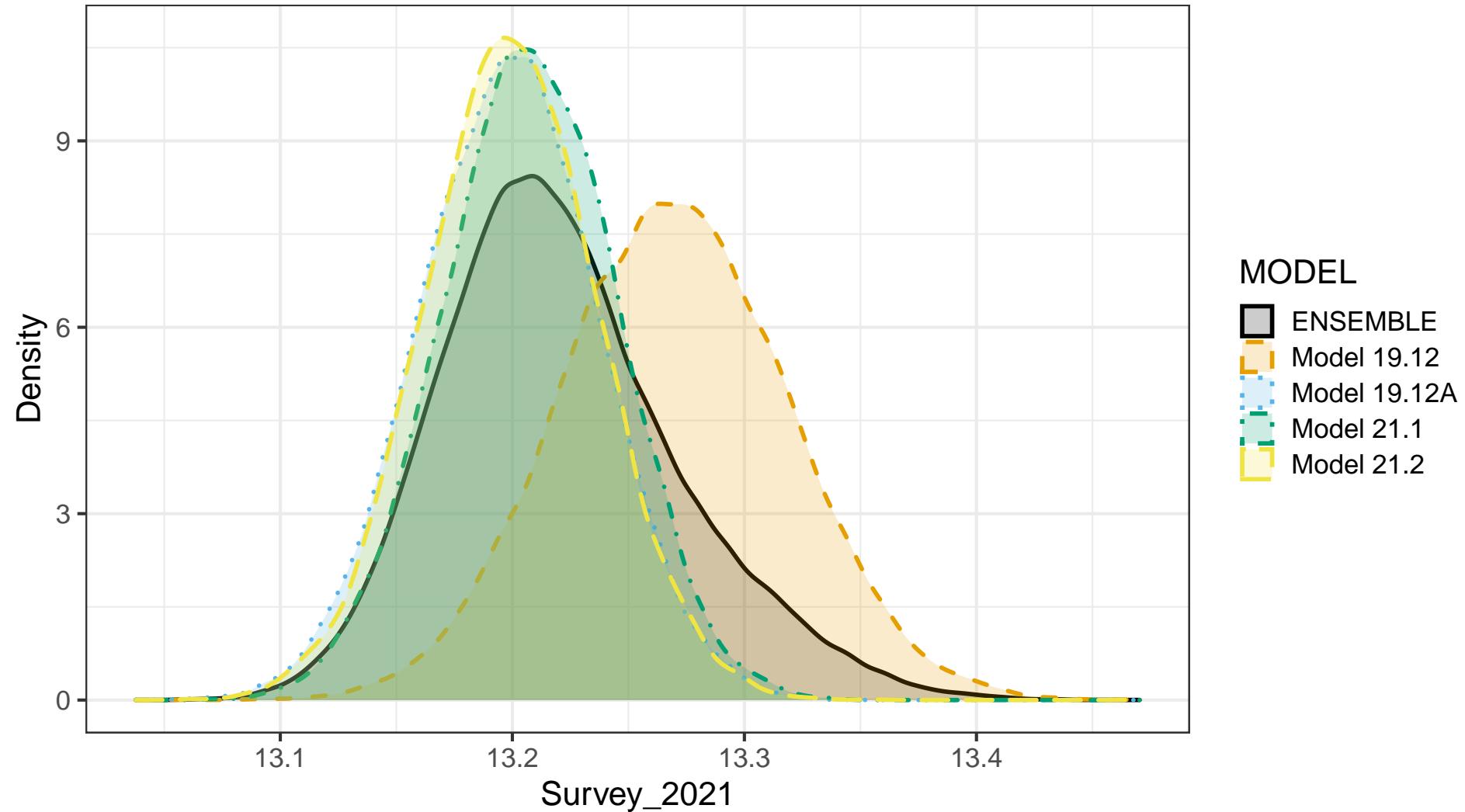
Survey_2018



Survey_2019



Survey_2021



Survey_2022

