

1 Stabilizing niche differences are still required to maintain
2 species-rich communities in temporally variable
3 environments

4 Coralie Picoche ¹, Alix Sauve¹, Frédéric Barraquand ^{1,2}

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6 ¹Integrative and Theoretical Ecology Chair, Labex COTE, University of Bordeaux, ²Institute of
7 Mathematics of Bordeaux, CNRS

8 **A Supplementary Material**

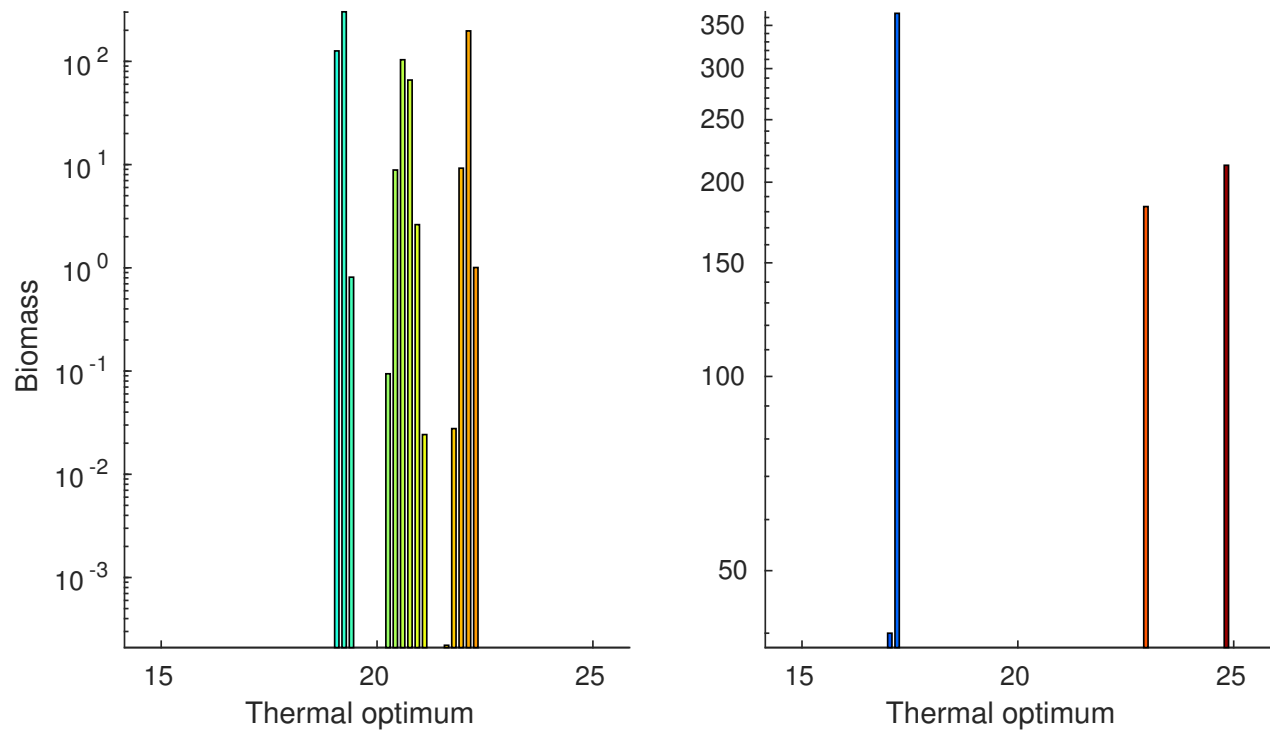


Figure A.1: Mean biomasses over the last 200 years of 5000-year simulations as a function of the thermal optimum defining each species, for a white noise (left) or a seasonal signal (right) with storage effect and no stabilizing niche differences. This simulation is the one described in Fig.1 in main text.

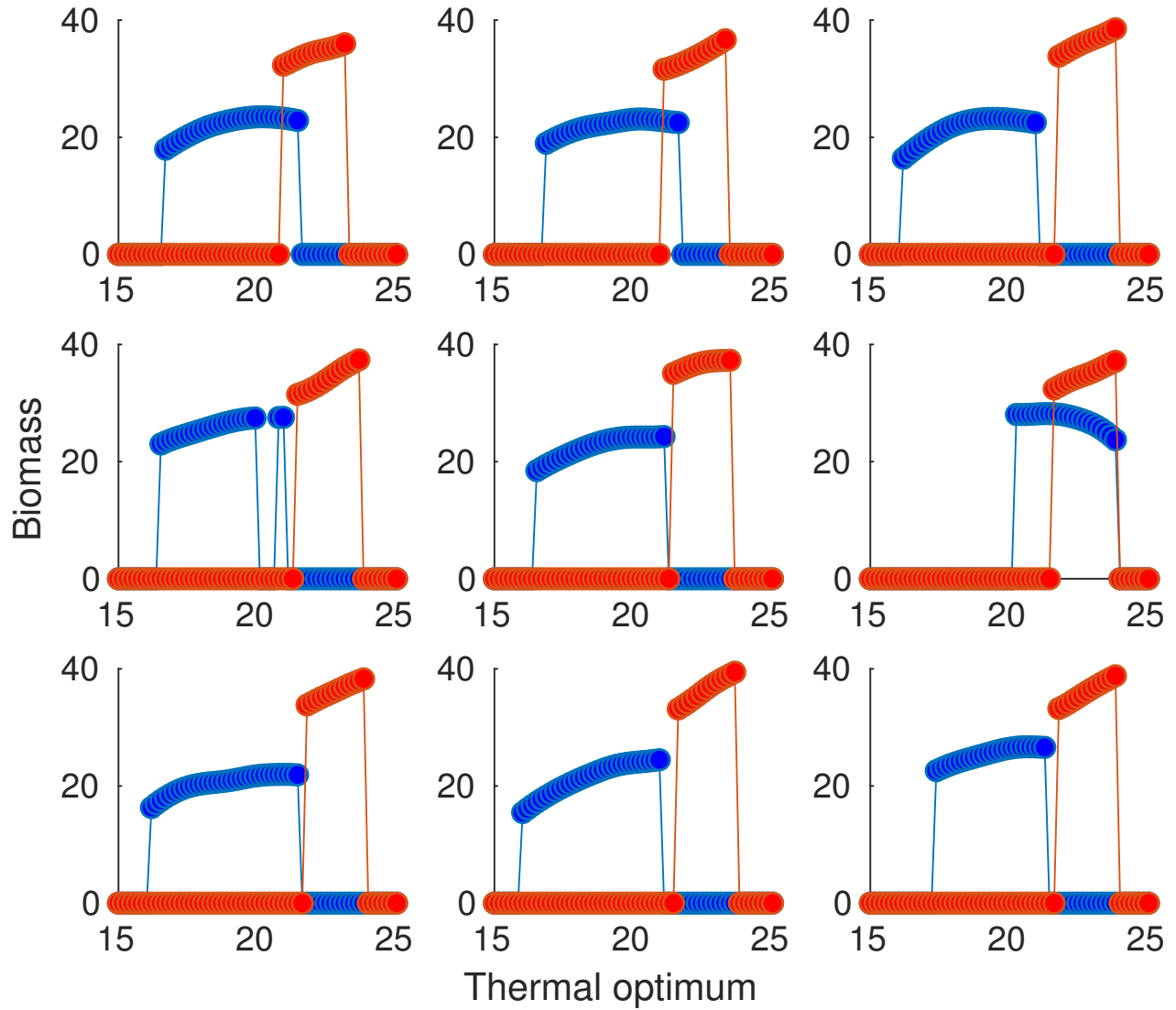


Figure A.2: Mean biomass distribution over the last 200 years of 9 representative simulations, as a function of thermal optima, without storage effect with stabilizing niche differences, in which temperature is either a seasonal signal (red) or a white noise (blue). The distribution induced by a white noise overlaps the one obtained with a seasonal signal in only 2 simulations out of 50.