



Supplement of

Evaluation of four calving laws for Antarctic ice shelves

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Amery Ice Shelf

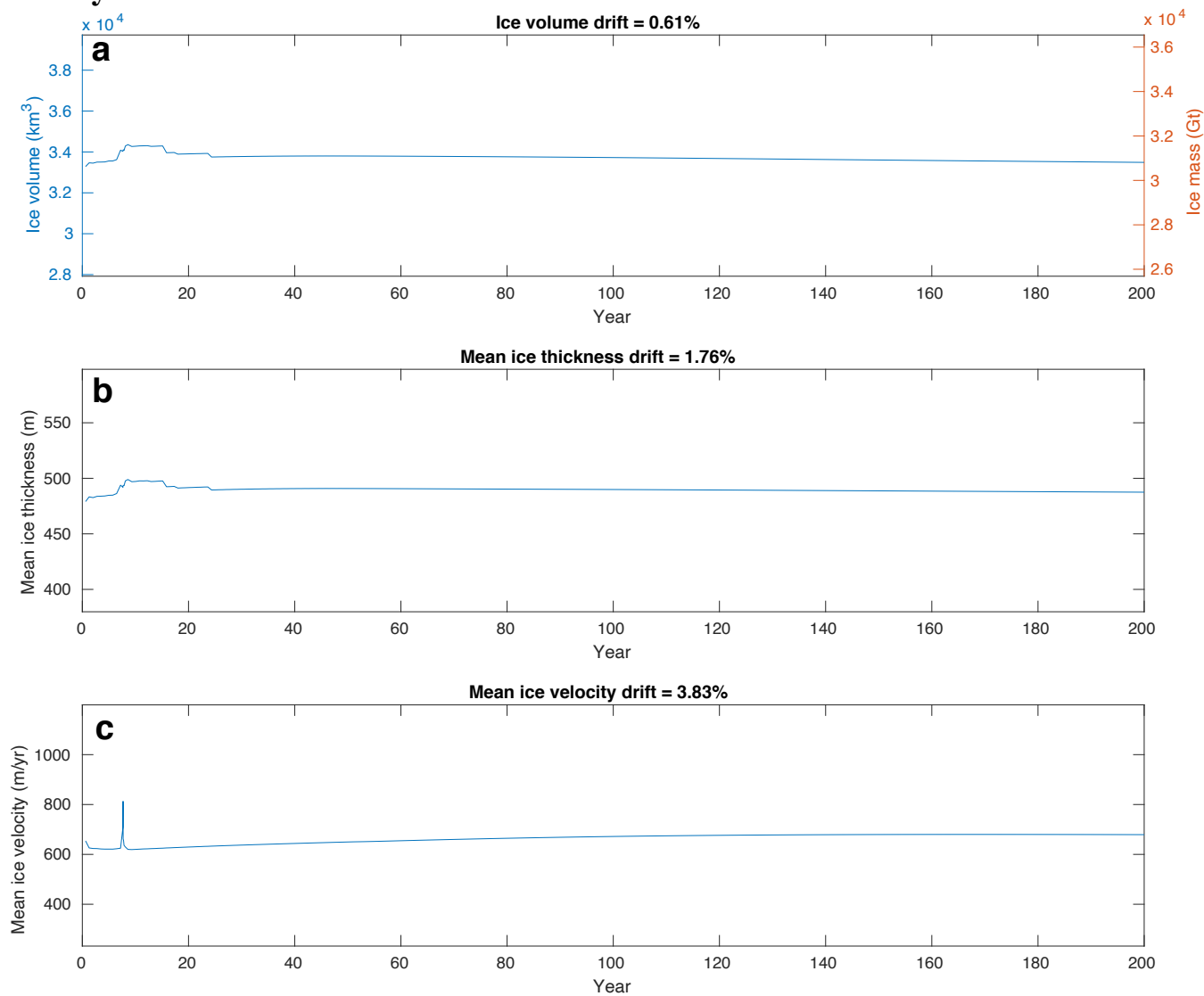


Figure S1. Calculated drift in (a) floating ice volume, (b) mean floating ice thickness, and (c) mean floating ice velocity for Amery Ice Shelf over the 200-year simulation period with a fixed ice front.

Denman Ice Shelf

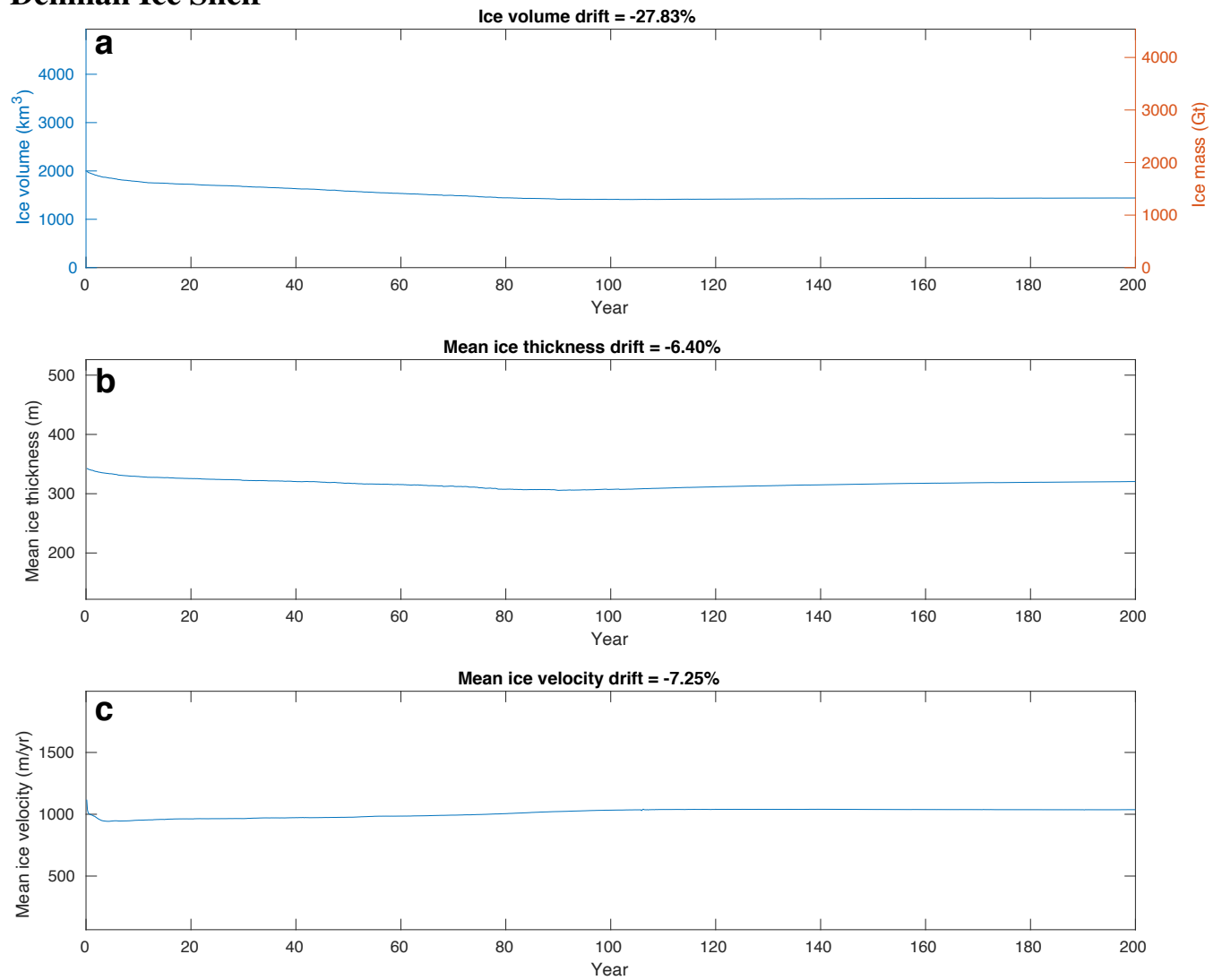


Figure S2. Calculated drift in (a) floating ice volume, (b) mean floating ice thickness, and (c) mean floating ice velocity for Denman Ice Shelf over the 200-year simulation period with a fixed ice front.

Filchner Ice Shelf

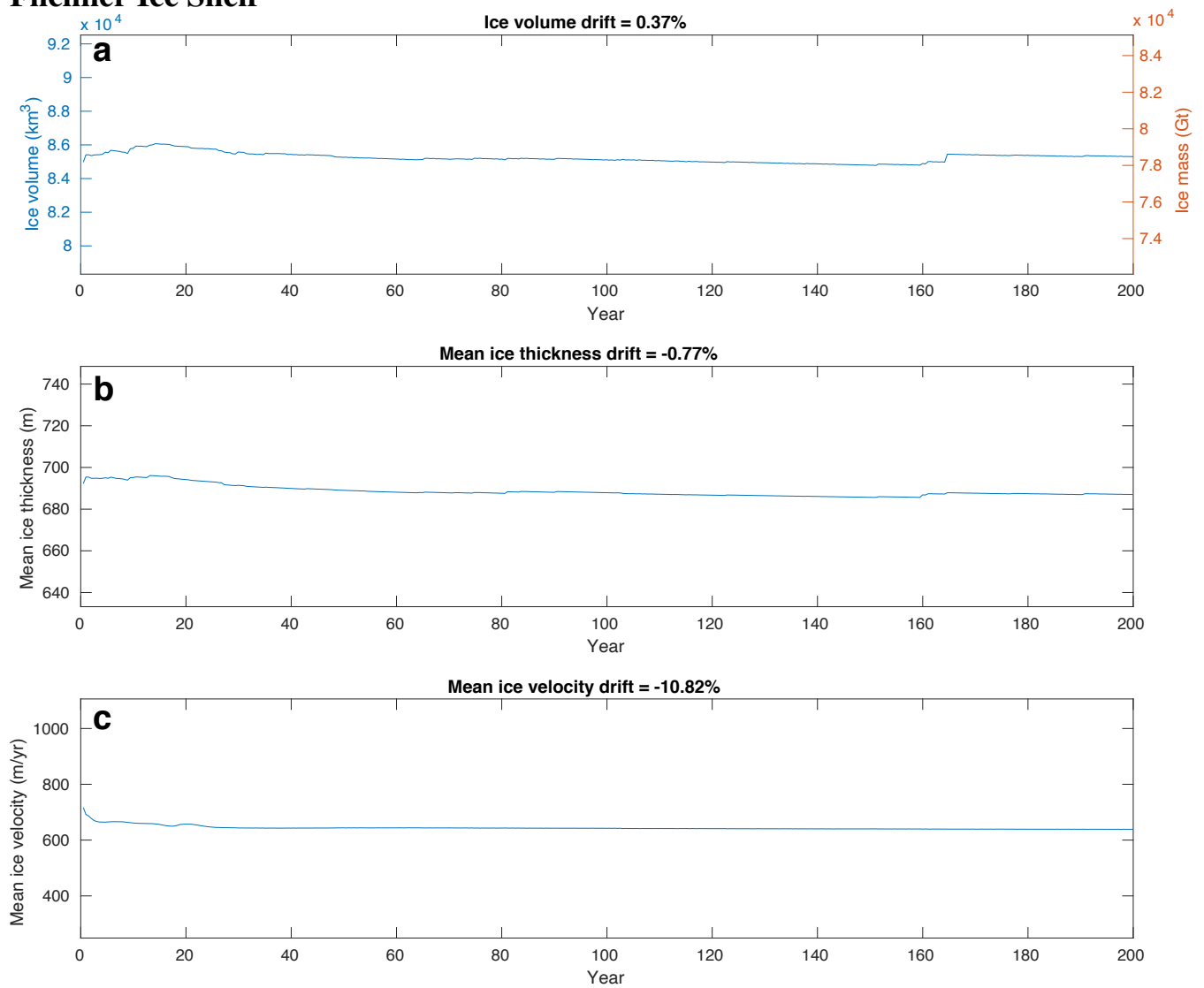


Figure S3. Calculated drift in (a) floating ice volume, (b) mean floating ice thickness, and (c) mean floating ice velocity for Filchner Ice Shelf over the 200-year simulation period with a fixed ice front.

Larsen C Ice Shelf

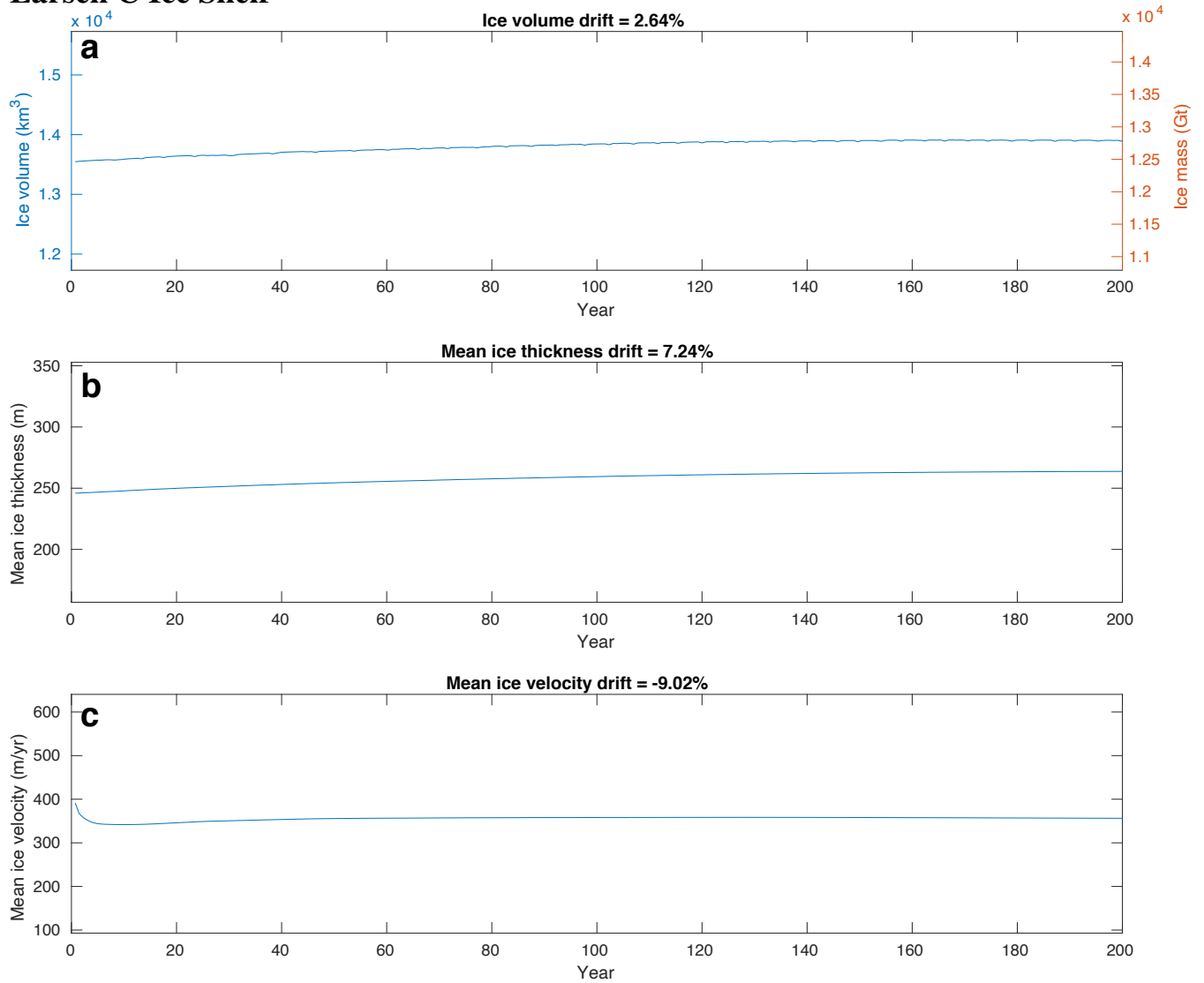


Figure S4. Calculated drift in (a) floating ice volume, (b) mean floating ice thickness, and (c) mean floating ice velocity for Larsen C Ice Shelf over the 200-year simulation period with a fixed ice front.

Pine Island Ice Shelf

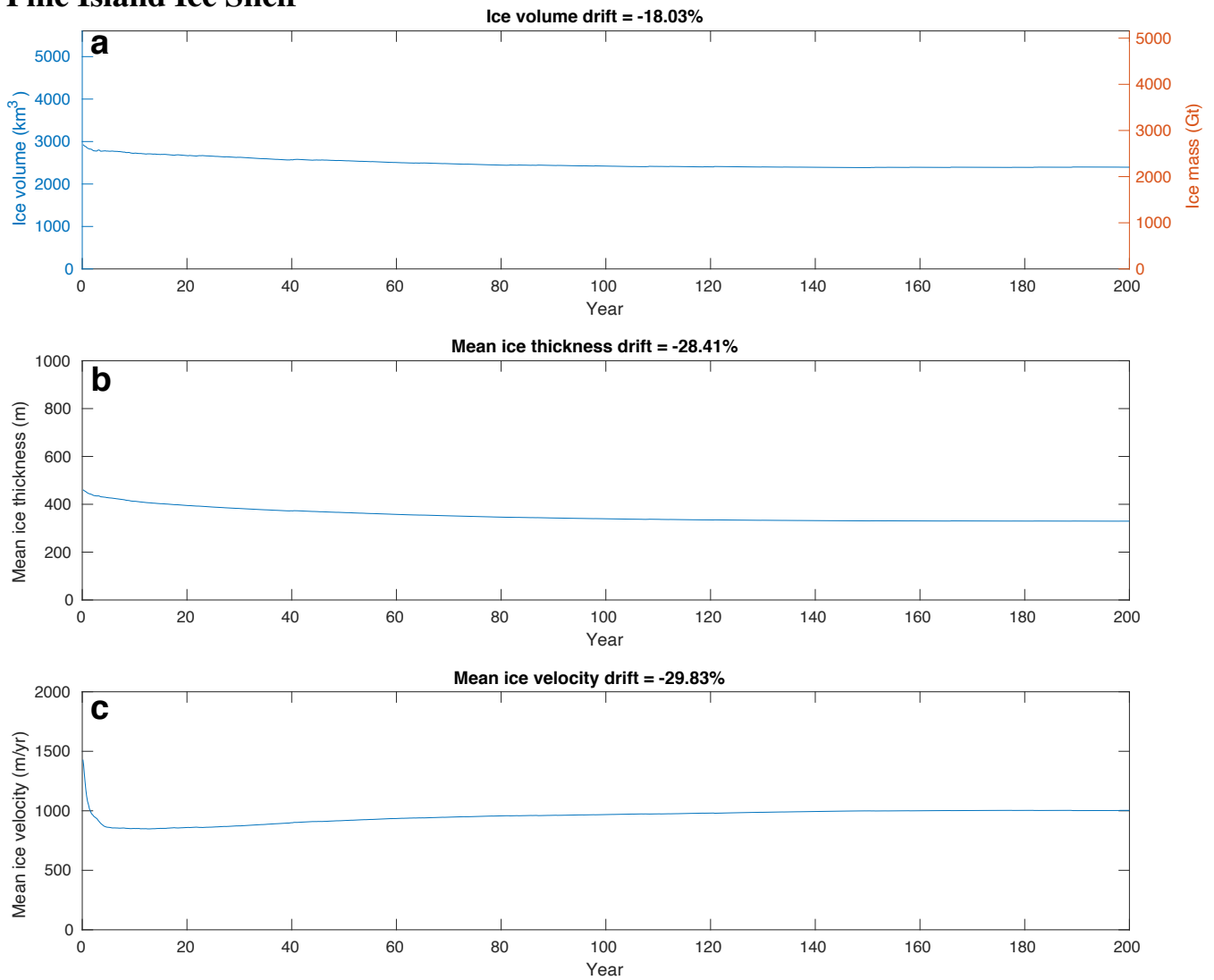


Figure S5. Calculated drift in (a) floating ice volume, (b) mean floating ice thickness, and (c) mean floating ice velocity for Pine Island Ice Shelf over the 200-year simulation period with a fixed ice front.

Ronne Ice Shelf

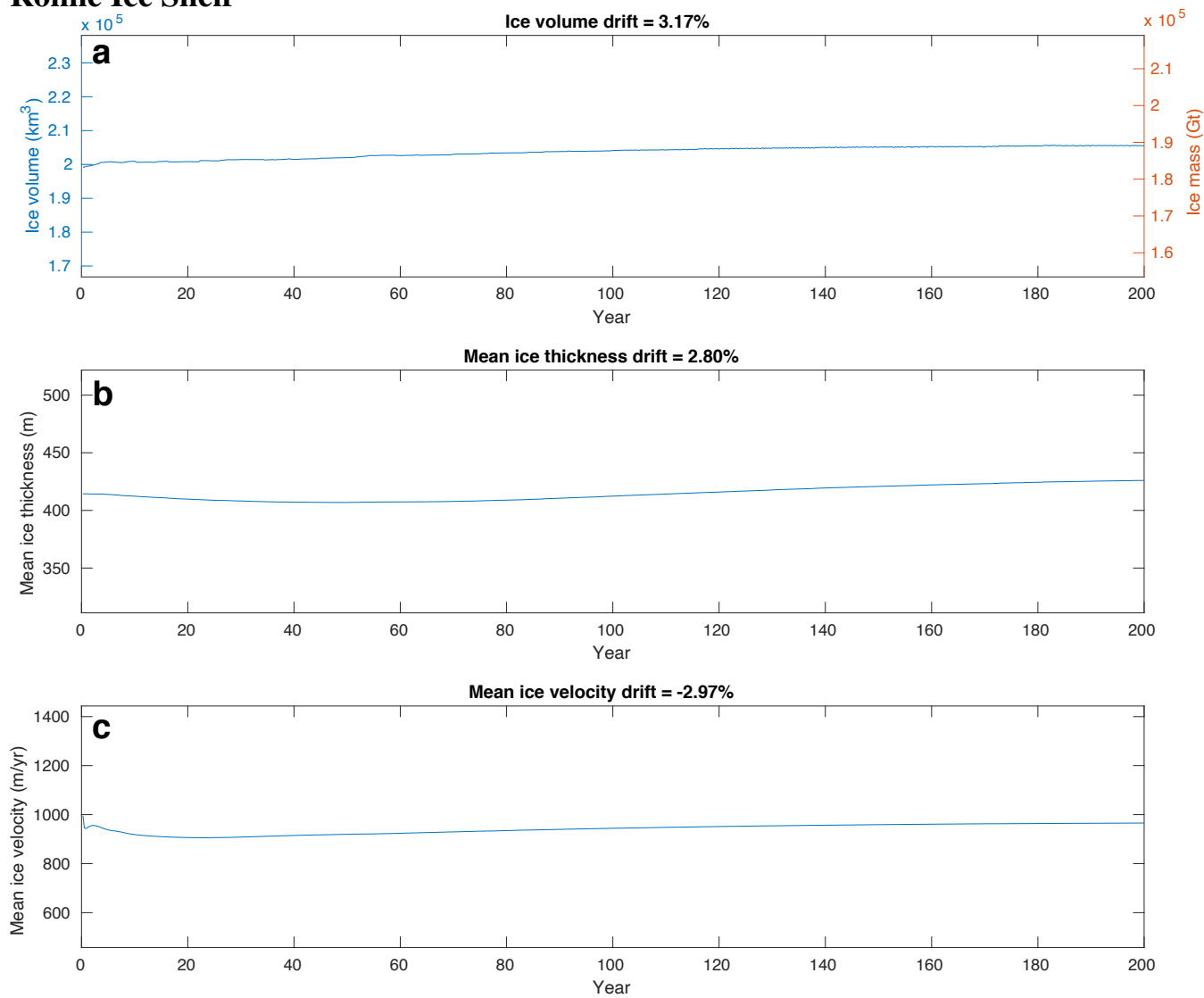


Figure S6. Calculated drift in (a) floating ice volume, (b) mean floating ice thickness, and (c) mean floating ice velocity for Ronne Ice Shelf over the 200-year simulation period with a fixed ice front.

Ross Ice Shelf

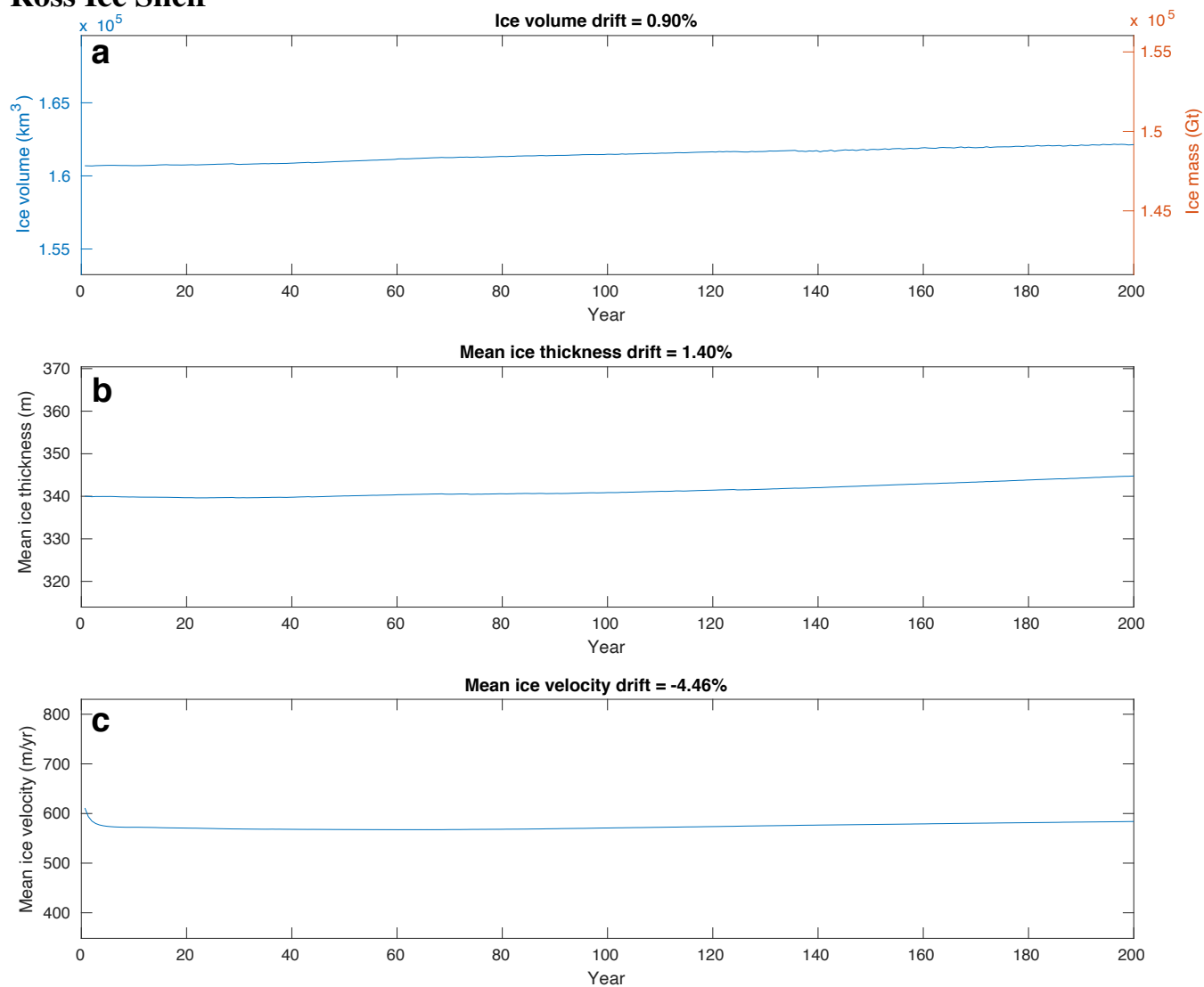


Figure S7. Calculated drift in (a) floating ice volume, (b) mean floating ice thickness, and (c) mean floating ice velocity for Ross Ice Shelf over the 200-year simulation period with a fixed ice front.

Shackleton Ice Shelf

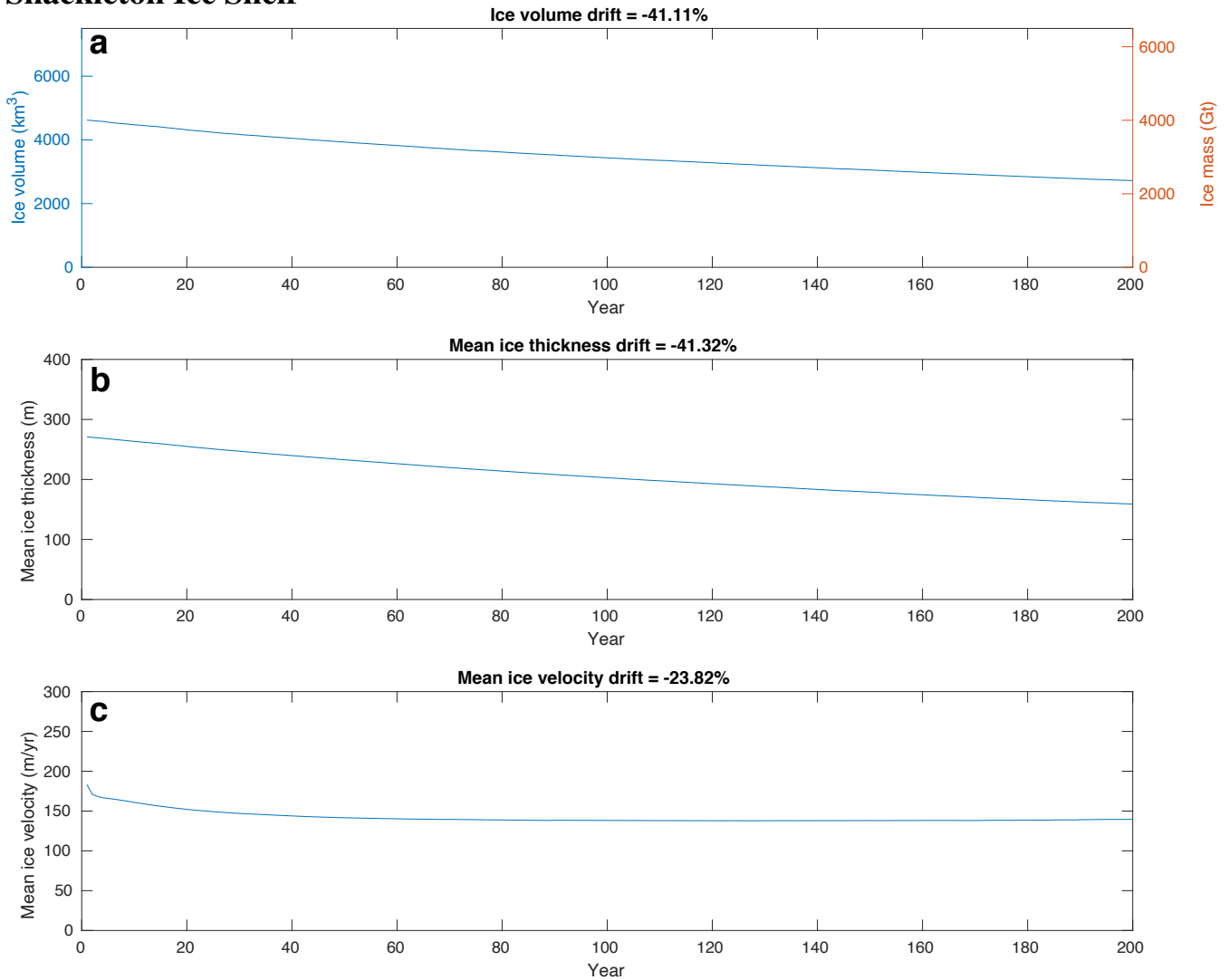


Figure S8. Calculated drift in (a) floating ice volume, (b) mean floating ice thickness, and (c) mean floating ice velocity for Shackleton Ice Shelf over the 200-year simulation period with a fixed ice front.

Thwaites Ice Shelf

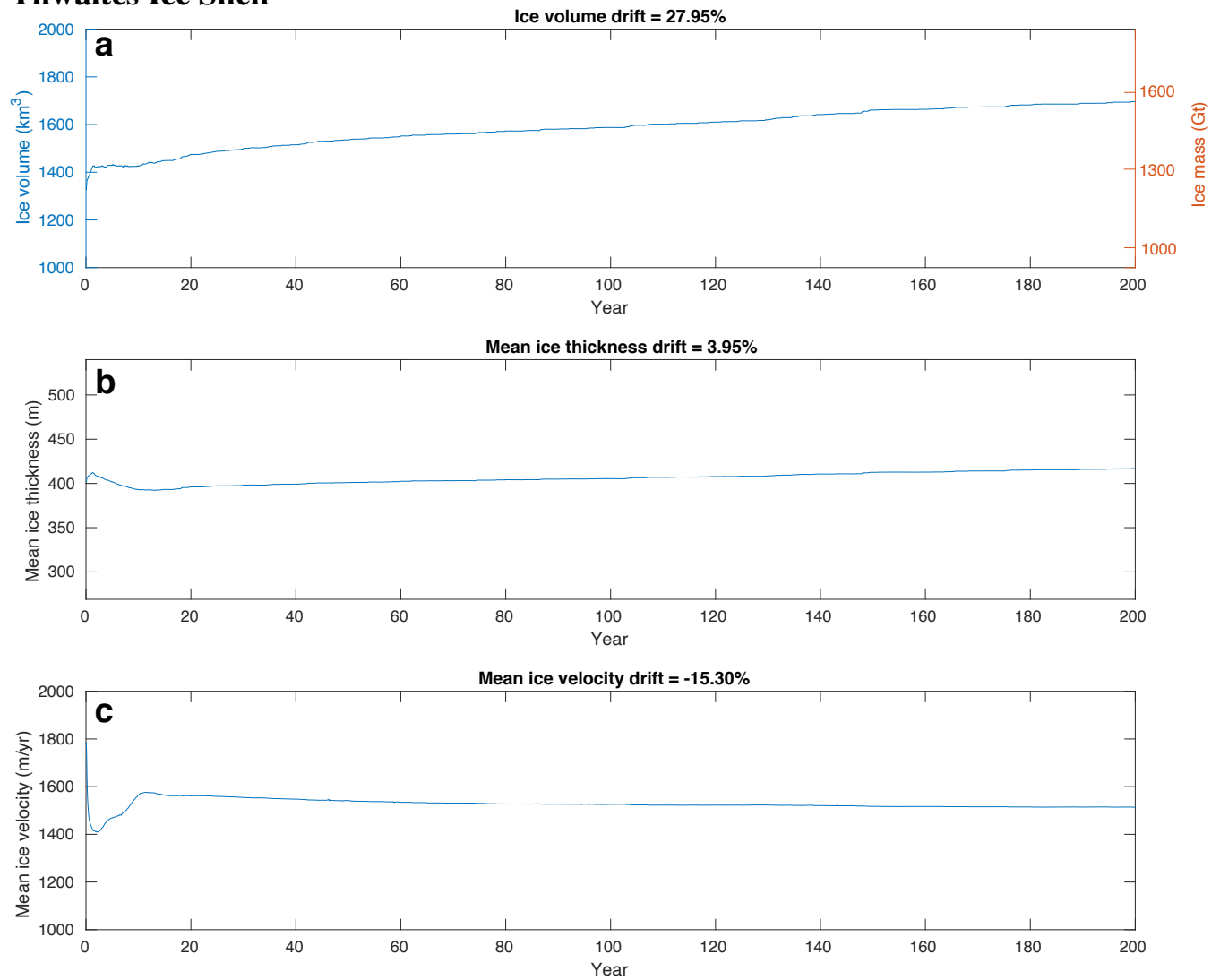


Figure S9. Calculated drift in (a) floating ice volume, (b) mean floating ice thickness, and (c) mean floating ice velocity for Thwaites Ice Shelf over the 200-year simulation period with a fixed ice front.

Totten Ice Shelf

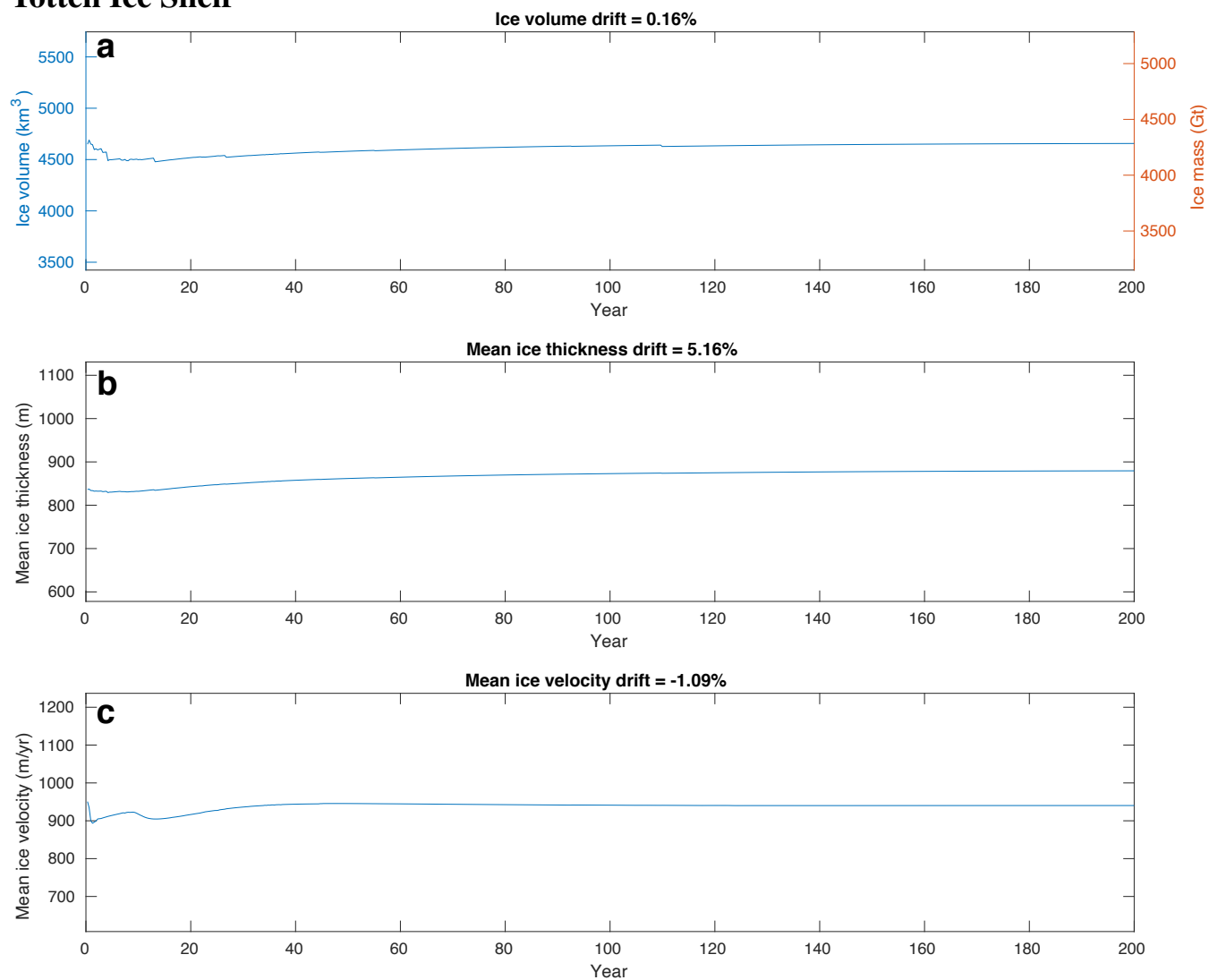


Figure S10. Calculated drift in (a) floating ice volume, (b) mean floating ice thickness, and (c) mean floating ice velocity for Totten Ice Shelf over the 200-year simulation period with a fixed ice front.

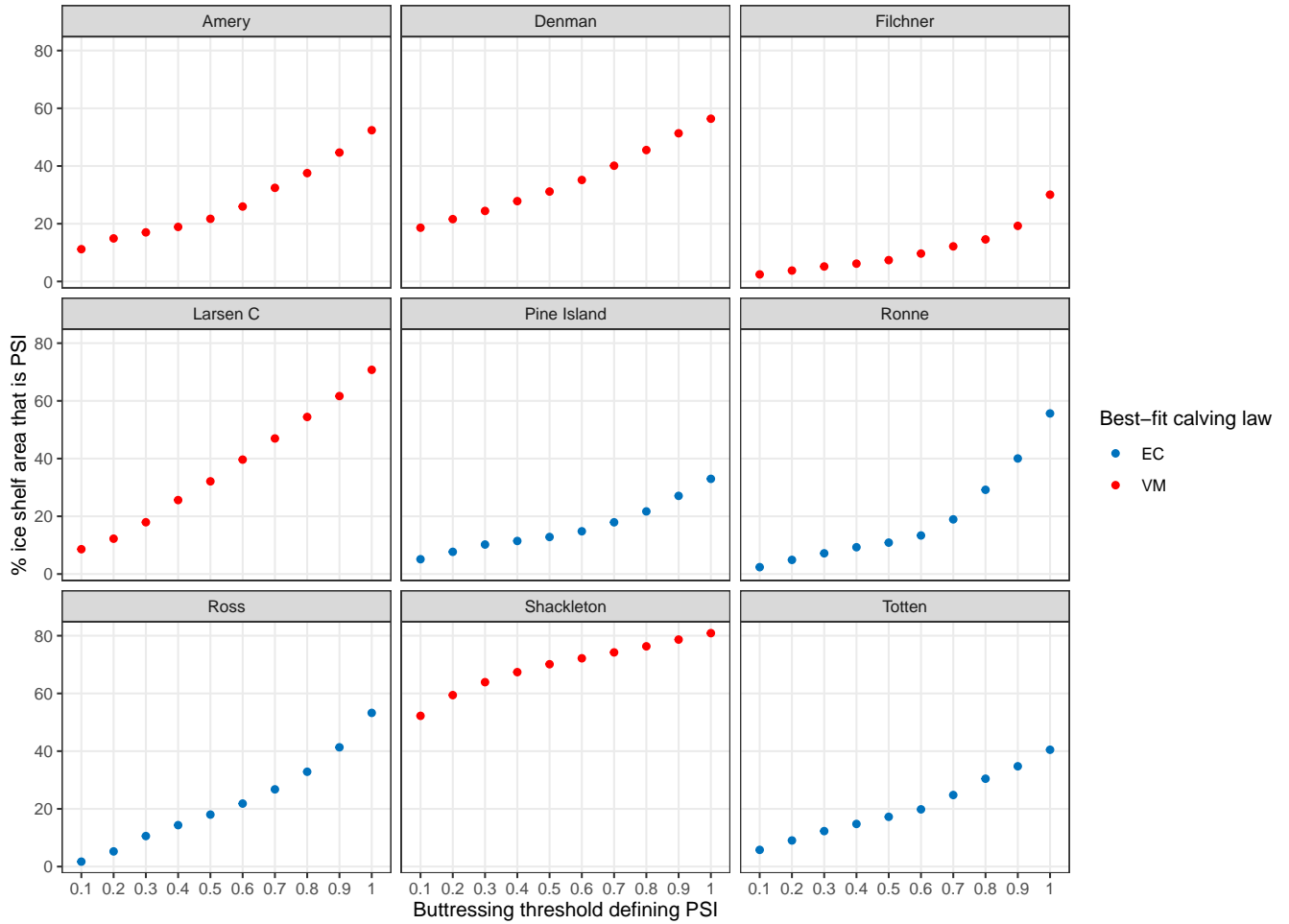


Figure S11. PSI fraction grouped by ice shelf for different buttressing thresholds defining PSI with eventual best-fit calving law (EC or VM) indicated. Here, PSI fraction is computed just after model initialization ($t=0$ yrs). Thwaites is excluded because it is not fit best by either EC or VM.

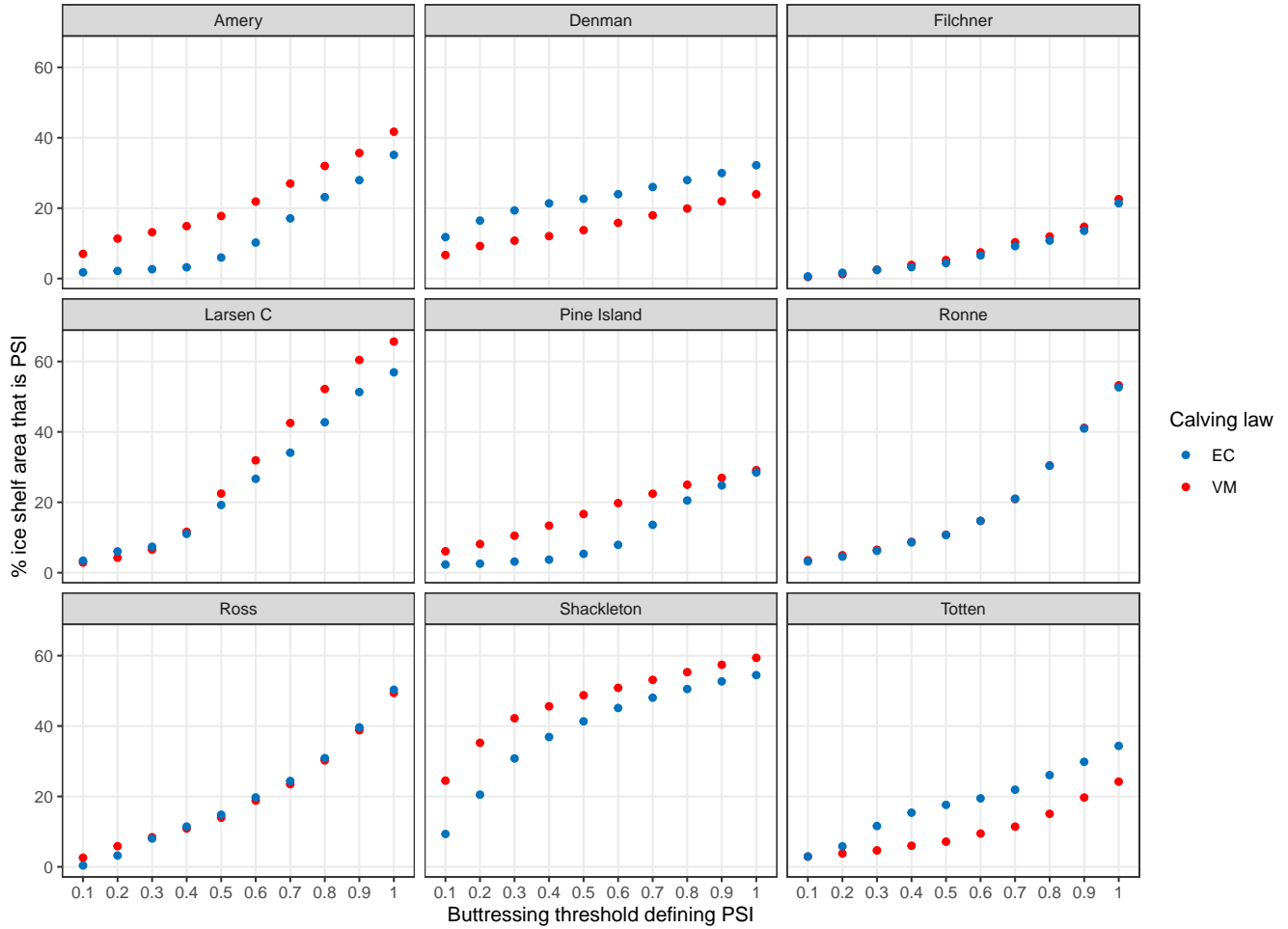


Figure S12. PSI fraction at the end of the simulation period ($t=200$ yrs) grouped by ice shelf for different buttressing thresholds defining PSI with EC and VM alternately applied to the model. Thwaites is excluded because it is not part of the EC versus VM comparison.