

## Overview of **Supplemental Material** accompanying

Konstantinou, A., 2022, The “death” of the Sevier-Laramide orogen: Gravitational collapse of the crust or something else?, *in* Craddock, J.P., Malone, D.H., Foreman, B.Z., and Konstantinou, A., eds., Tectonic Evolution of the Sevier-Laramide Hinterland, Thrust Belt, and Foreland, and Postorogenic Slab Rollback (180–20 Ma): Geological Society of America Special Paper 555, [https://doi.org/10.1130/2021.2555\(15\)](https://doi.org/10.1130/2021.2555(15)).

Appendix S1, Table 1: Database with global compilation of metamorphic core complexes, indicating which ones have a pluton in the lower plate and the proportion of the lower plate that is represented by synextensional pluton(s). Table 2: A compilation of synextensional plutons L:W exposed at metamorphic core complexes.

Appendix S2: Maps of metamorphic core complexes compiled in this study and used to estimate the area of the lower plate exposed (outlined by the blue polygon) and the area of the synextensional plutons exposed (outlined by the red polygon).

Appendix S3: Excel file with Monte Carlo model used to calculate the pluton area:lower plate area and the inferred volumetric proportion of plutons in the lower crust of metamorphic core complexes. See text for description of the model.

Appendix S4: Excel file with Monte Carlo model used to estimate the crustal thickness and plateau elevation through time, with the assumption of an open system (includes magmatic addition to the crust). See text for description of the model.

Appendix S5: Excel file with Monte Carlo model used to estimate the crustal thickness and plateau elevation through time, with the assumption of a closed system (excludes magmatic addition to the crust). See text for description of the model.

Appendix S6: Matlab script and inputs used to estimate crustal thickness and plateau elevations during Mesozoic compression.

Appendix S7: Excel file with igneous rock geochemistry used to estimate crustal thickness.