

Interactive comment on “Simulating past droughts and associated building damages in France” by T. Corti et al.

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Drought induced damage to buildings and other structures has not received wide attention in scientific literature outside structural engineering where it is viewed in terms of site soil and geological properties. Corti et al recognise that meteorology could be a dominant factor in determining historical and future trends in damage at a site. In this early modeling effort, site characteristics are subsumed in averages. The model uses hydrological (drought) and climate (temperature) indicators to estimate monetary cost of damage to buildings due to changes in soil structure caused by droughts. They show a good correlation between damage and trends in temperature and by implication droughts. The model is sufficiently robust when describing averages but fails for extreme events. The authors acknowledge this shortcoming suggesting a possible

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separate treatment for “outlier” cases. It is understandable that they do not attempt to construct an extreme value model with the very limited data at their disposal.

I like the paper not only because it attempts something new in climate modeling but also because it draws attention to a little regarded impact of climate change. Like drought, building damage is often a slow occurring event but ultimately a costly and potentially dangerous one over the long run. Given the trend demonstrated in their paper, design of new structures should include adequate drought adaptive strategies. The article is well written and illustrated. The model is appropriately tested and the conclusions are prudently restrained. On a scale of 1 to 10, I rate it a 7.

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