Corrigendum: Attribution of extreme rainfall from Hurricane Harvey, August 2017 (2017 Environ. Res. Lett. 12 124009)

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Updated EC-Earth results

In the computation of the EC-Earth results, we accidentally included all grid boxes and not only the land points as we intended. We redid the calculations using the land points only. This implies an update to figure 6 (given below), but it makes only a slight differences to the EC-Earth results. The comparison with the observed fit for the model evaluation is somewhat better in the dispersion parameter \( \sigma/\mu \) and now good in the shape parameter, although the model now requires a bias correction of 18%. The increase in intensity for land points only is \( \Delta I = 17\% \) (11% ... 23%), compared to the \( \Delta I = 17\% \) (10% ... 23%) for all points. The risk ratio is a bit higher, 2.5 (1.8 ... 4.1) instead of the 2.2 (1.3 ... 4.1) reported in the article.

Updated synthesis and conclusions

This changes figure 7 slightly as well, but does not affect the conclusions. The change in increase remains 15% with an uncertainty range 8%–19%. The change in risk ratio stays the same, a factor of three, but with a slightly higher uncertainty range, 1.6–6 rather than 1.5–5. This strengthens our conclusions by a negligible factor.

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Figure 6. The same as figure 4, but for (a)–(c) the four EC-Earth T799 experiments and (b)–(d) the four static forcing HiFLOR experiments. For EC-Earth, the fit of the annual and spatial maximum three-day average precipitation on the US Gulf Coast to a GEV that scales with the RCP4.5 equivalent CO$_2$ concentration. For HiFLOR, the fit is to a GEV that scales with the modelled GMST.

Figure 7. Synthesis of the results. (a) Intensity changes 1880–2017 for local and regional extreme three-day precipitation events along the US Gulf Coast (%). Observations are shown in blue, models in red. The magenta line is the average of the three estimates from local observations (with smaller uncertainties) and the two regional model analyses (that can only reproduce these more extreme events reliably). (b) Same for the risk ratios (changes in probability).