

# ***Interactive comment on “The Vulcan Version 3.0 High-Resolution Fossil Fuel CO<sub>2</sub> Emissions for the United States” by Kevin R. Gurney et al.***

**G. Marland**

marlandg@appstate.edu

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As no one but Kevin Gurney can ever fully appreciate, the paper on Vulcan 3.0 represents a massive effort of collecting and processing huge amounts of varied data. To dig out the focused, fine-scale data relevant to CO<sub>2</sub> emissions at 1 km by hourly resolution is a heroic effort. Yes, it requires approximations, surrogates, linear extrapolations, etc., but the Vulcan product is the gold-standard for spatial and temporal resolution at the scale of a large country. As a reviewer I can point out a few queries such as the fact that the meaning of the quotation marks in Table 2 needs clear explanation, Figure 7 does not appear to be cited in the text, and the number in line 13 on page 29 does not match what appears to be the same value in Table 6 (and the abstract) – but my substantive suggestions for the paper relate to the discussions of uncertainty. Most no-

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table, the values for uncertainty throughout the text do not generally have reference to the relevant spatial and temporal scale and do not lead to summary values at the end of the paper (except for Figure 7 which is national/monthly). So Figure 10 is annual, and presumably 1 km – what kind of uncertainty are we talking about? And what kind of uncertainty are we looking at by the time we get this down to hourly? It is cool stuff.

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Interactive comment on Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2019-154>, 2019.

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