

Interactive comment on “The problem of the second wind turbine – a note on a common but flawed wind power estimation method” by F. Gans et al.

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The paper "The problem of the second wind turbine – a note on a common but flawed wind power estimation method" by F. Gans, L. M. Miller, and A. Kleidon presents an interesting point on how to compute the extraction of energy by wind turbines and relates it to the actual properties of the atmosphere. The authors convincingly argue on the fact that previous estimates of wind energy production have been inflated by erroneous analyses of kinetic energy balances in the fluid.

I have a few suggestions for the authors.

1) I would encourage them to write some balance equations expressing the kinetic

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energy budget of the fluid ion terms of fluxes at the boundaries and sources and sinks inside the domain. I suggest to give a look at Kundu-Cohen or Peixoto and Oort.

2) Some reference to the climatic impacts of large scale wind farms should be briefly presented. I suggest, e.g. the authors to make reference to (and briefly discuss) the paper: C. Wang and R. G. Prinn, Potential climatic impacts and reliability of very large-scale wind farms, *Atmos. Chem. Phys.*, 10, 2053–2061, 2010 which is now listed in the references but not referred to.

Interactive comment on *Earth Syst. Dynam. Discuss.*, 1, 103, 2010.

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