Geosci. Model Dev. Discuss., 7, C782–C783, 2014
www.geosci-model-dev-discuss.net/7/C782/2014/

Geoscientific Model Development Discussions
Open Access

Interactive comment on "Direct numerical simulations of particle-laden density currents with adaptive, discontinuous finite elements" *by* S. D. Parkinson et al.

H. Weller (Editor)

h.weller@reading.ac.uk

Received and published: 6 June 2014

In finite diffrences, one grid point = one degree of freedom (per variable), independent of the order of accuracy used.

Parkinson et al use 10^7 adaptive elements. Espath et at use 10^7 fixed uniform grid points. You get similar results. So the 6th order FD scheme of Espath must be alot more accrute as a function of dx since their dx must be alot larger where your refinement criteria tell you to refine the mesh. So their scheme is (probably) cheaper and gives similar accuracy. But not so good for complex geometries.

Another point, you use the phrase "traditional FE model". Would it be more precise to

Full Screen / Esc
Printer-friendly Version
Interactive Discussion
Discussion Paper

say "fixed, uniform mesh FE model".

Interactive comment on Geosci. Model Dev. Discuss., 7, 3219, 2014.

GMDD

7, C782–C783, 2014