

Interactive comment on “Current estimates of biogenic emissions from Eucalypts uncertain for Southeast Australia” by K. M. Emmerson et al.

Anonymous Referee #1

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Emmerson et al. presents the first detailed evaluation of the biogenic emissions model MEGAN coupled to a high resolution regional tropospheric chemistry model over southeast Australia. Biogenic VOC emissions are a significant portion of emissions in the Southern Hemisphere and the MEGAN model indicates southeast Australia has one of the highest isoprene-emitting regions. The regional model (CCAM) was run at 3km horizontal resolution, requiring the development of a new 3km landcover and vegetation map with which to drive MEGAN, which was done by combining results from several previous studies. Observations of ambient mixing ratios and emissions fluxes of isoprene and terpenes were used from several studies in southeast Australia were used for a quantitative evaluation of the emissions. The indication that isoprene and terpenes are emitted in comparable amounts is a new finding. The isoprene oxidation scheme in the regional model CCAM is also evaluated by comparison to observed iso-

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prene oxidation products (MVK and methacrolein). In addition to the specific results of this study, this paper illustrates a procedure for quantitative evaluation of biogenic emissions models that should be applied to other parts of the globe.

This paper is clearly written and the figures clearly illustrate the conclusions of the paper. The title and abstract accurately represent the results of the paper. I recommend publication of this paper after addressing the minor comments listed below.

Intro. p1,l.29: Say 'approximately' instead of 'in the region of' because you also talk about a lot of geographical regions.

p.3, l.32: 'emission pattern' is confusing. Isn't it just 'emissions'?

p.8, l.16: 'via' - do you mean 'dependent on'? Perhaps re-word 'flow-on' also.

p.9,l.26: 'domain' instead of 'grid'; 'simulation' instead of 'approach'

p.10, l.23: add 'for Eucalypt' after 'emission factors'

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