

2016 Biogenic Workgroup

List of QA steps to apply to biogenic models

Draft version

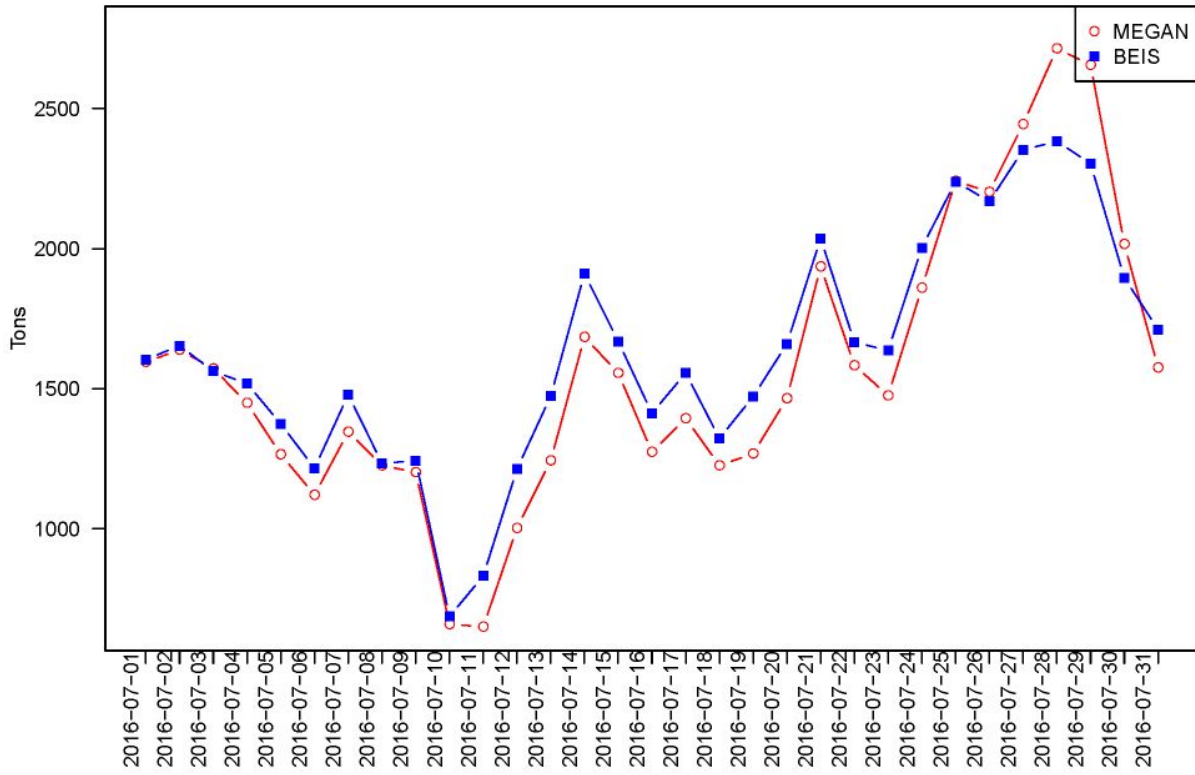
Biogenic model input QA and methods

- Where applicable, compare VOC, NO, and CO emissions factors for like vegetation between models.
- Where applicable, compare input landuse vegetation types between models
- Where applicable, examine how each model handles transition from winter to summer (seasons).

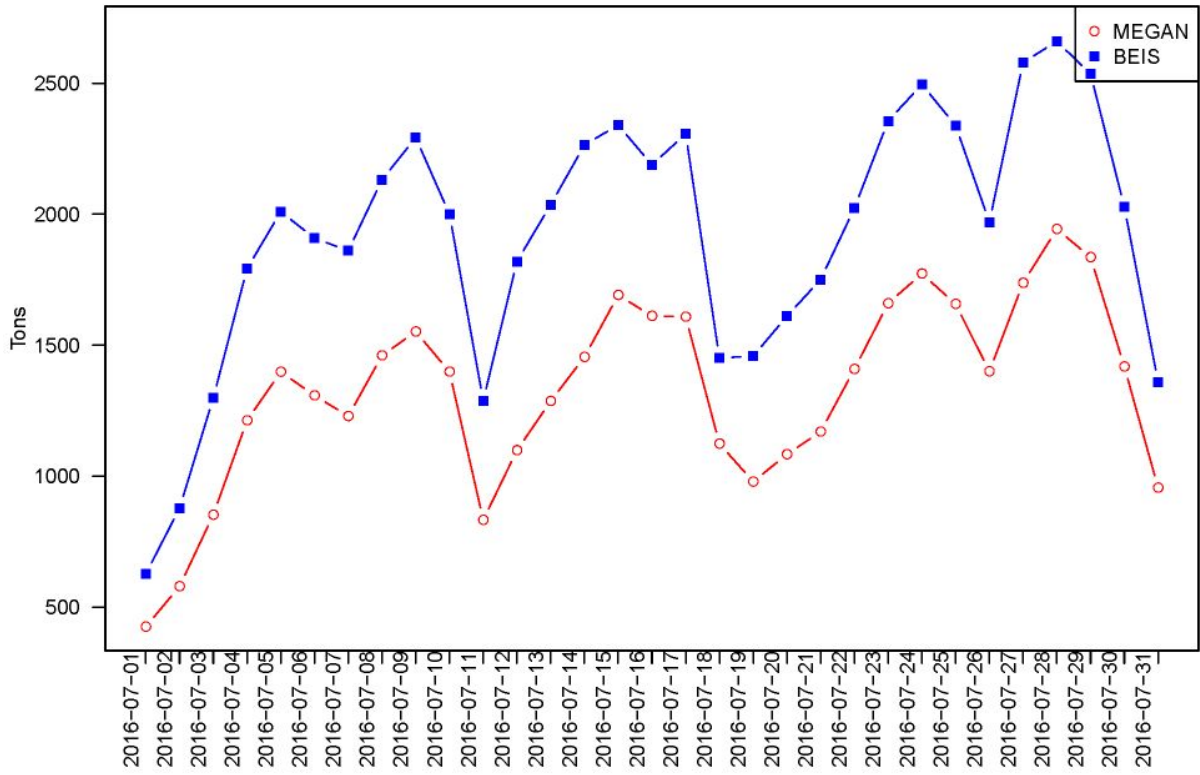
Biogenic model output QA

- Create hourly or daily emission tile plots of all the VOC CB05/6 species (isoprene, formaldehyde, terpene, etc.), CO (carbon monoxide), and NO (nitric oxide) for each domain (units in moles)
- Create monthly emissions tile plots of VOC and NO (units in tons)
- Possibly create monthly emissions tile plots of VOC species (isoprene, formaldehyde, terpene, etc.), CO (carbon monoxide), and NO (nitric oxide) (units in moles)
- *Tile plots also provide hourly and daily sums by country (US, Canada, Mexico, Others) or by TX areas (HGB, DFW, etc.) of the model species. Compare countries/areas/domain daily totals from latest version to previous.*
- County annual totals for NO and VOC (tons/year)
- County daily totals for NO and VOC (tons/year)
- *Plot line or bar charts of new BEIS daily EI vs. previous (time scale, units??)*

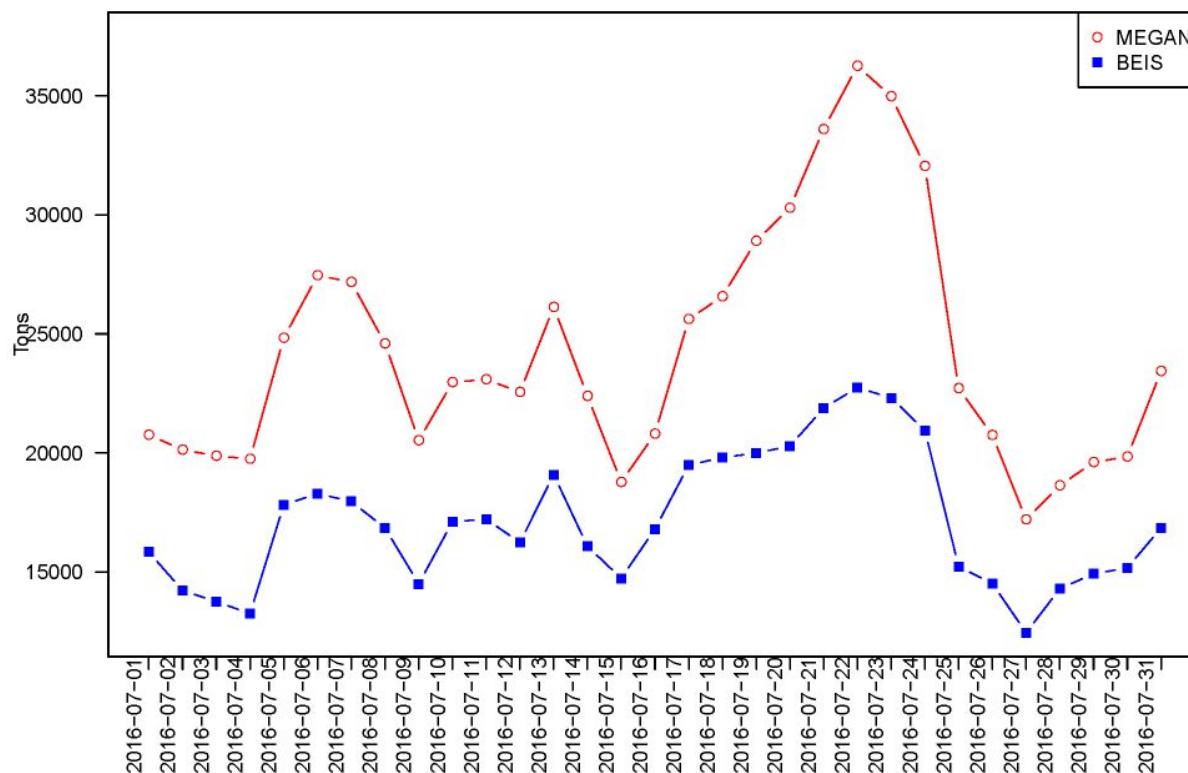
California ISOP



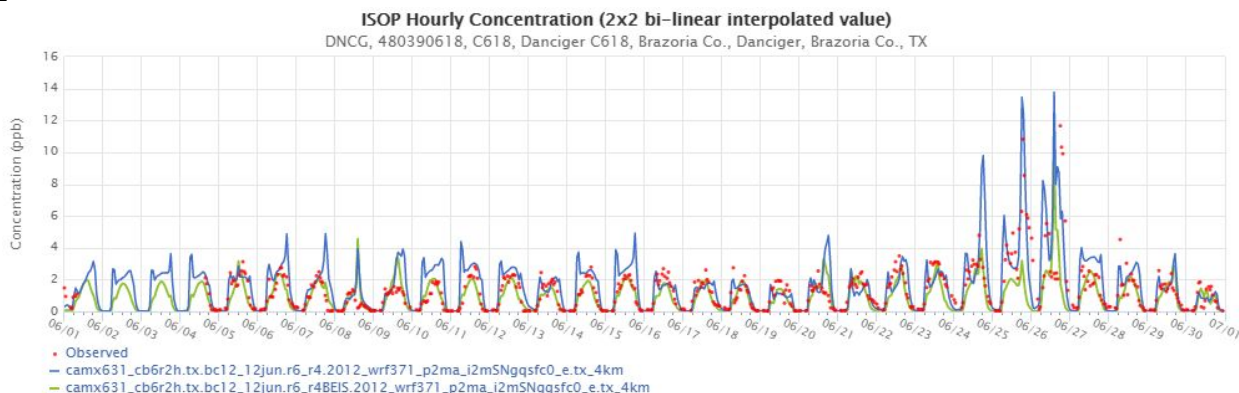
Arizona ISOP



Texas ISOP



- *Hourly time series analysis*
 - *Monthly-state-species comparison? (maybe VOC and NO enough, but isoprene popular)*
- Summarize and compare post-simulation CAMx/CMAQ ozone and isoprene from runs with MEGAN and BEIS versus monitors/observations for TX area and full domain via tile plots, bar/line charts, and tables.



Also, look at time series plots of specific monitors. Can view two model runs on monitor time series plots to examine daily differences of models and monitored values.

- o View hourly modeled ozone overlay with observed ozone markers on interactive map.
- o View biogenic emissions hourly time series in nearby grid cells to monitors

Modeled Isoprene Overlay with Observed Ozone Markers: One-hour Averages

