AIRPACT-4 Current Setup

(Refer to the change log for AIRPACT-4 history.)

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| **Component** | **Model/Tool** | **Version** | **Date/Notes** |
| Meteorology | WRF | 3.4.1  ·  New Thompson et al. microphysics  ·  RRTMG shortwave radiation  ·  RRTMG longwave radiation  ·  NOAH LSM  ·  MM5 similarity theory for surface layer  ·  YSU PBL  ·  Simplified Arakawa-Schubert cumulus parameterization | 2012-10-11 |
| Conversion of wrfout files | MCIP | 3.6 | since inception |
| Anthropogenic Emissions | ·       Conventional Nonpoint, locomotives, ships, and aircraft:          2005 inventory projected to 2009  ·       Residential wood combusion:  ·       Road dust  ·       Dairy  ·       Point sources:          mostly 2005, with some adjustments for known closures in 2009  ·       Mobile Sources, except ships, locomotives, and aircraft:          SMOKE-MOVES2010b for U.S.; MOBILE6 for Canada | | ·  since inception    ·  since inception  ·  since inception  ·  since inception  ·  since inception    ·  SMOKE-MOVES for US implemented on 2013-10-10 |
| Biogenic Emissions | MEGAN | 2.04 | since inception, isoprene emissions from two poplar plantations incorporated on Jun 20, 2013. |
| Fire Emission | ·  SMARTFire (fire locations & sizes)  ·  BlueSky (emissions)  ·  SMOKE (plume rise) | ·  2      ·  3.5.1    ·  2.x | ·  2014-05-28      ·  2014-05-28    ·  2014-05-28 |
| Chemical Boundary Conditions | MOZART-4 |  | since inception (MOPITT CO assimilation into MOZART-4 ended in July 2012 ) |
| Chemistry and Transport | CMAQ | 4.7.1 with the following options:  ·  SAPRC99 gas-phase mechanism  ·  AE5\_AQ aerosol scheme (with updates to SOA parameters based on Carlton et al., 2010)  ·  yamo advection scheme  ·  multiscale diffusion scheme  ·  acm2\_inline vertical diffusion  ·  phot\_tab for photolysis  ·  cloud\_acm\_ae5 for convective mixing and aqueous chemistry | since inception |