The RAMMPP program collaborated with Maryland Department of the Environment (MDE) to conduct modeling studies for the Maryland State Implementation Plan (SIP). EPA approved chemistry transport models (CTM) such as CMAQ and CAMx were used driven by national emissions data. Beside 4-D distribution of air pollutants like ozone and PM2.5, these CTMs can simulate the deposition of major particulate matters including ammonium (NH4+), nitrate (NO3-) and sulfate (SO42-). For instance, CMAQ outputs the hourly rate of dry deposition (DD) and wet deposition (WD) of reduced nitrogen (sum of NH4+ and NH3), oxidized nitrogen (sum of NO2, NO, HNO3, NO3-, PAN, etc.). These deposition rates play an important role in water quality and eutrophication of the coaster water body such as the Chesapeake Bay. This webpage contained July 2011 monthly mean daily deposition rate from CMAQ for the Eastern U.S. from three SIP CMAQ experiments. The baseline run (Figure 1) was driven by the EPA 2011 emissions, while the 126\_1 and 126\_2 runs have projected changes in emissions from power plants in Pennsylvania (PA). Figure 2 shows the change in deposition rate under 126\_1 and 126\_2 scenarios. With more reduction in PA power plants (mainly NOx emissions), the dry deposition of oxidized nitrogen decreased, while the dry deposition of reduced nitrogen increased due to the equilibrium of NH4-NO3-SO4. On the other hand, wet deposition of both oxidized and reduced nitrogen decreased.

\*The deposition data in the format of netCDF. Please contact Dr. Hao He (haohe@umd.edu) for details about the dataset.

**Figure 1.** Daily mean deposition rate in July 2011 from the 2011 baseline CMAQ simulations. a) dry deposition of the oxidized nitrogen, b) dry deposition of the reduced nitrogen, c) wet deposition of the oxidized nitrogen, d) wet deposition of the reduced nitrogen

**Figure 2.** Change in daily mean deposition rate in July 2011 from 126\_1 and 126\_2 CMAQ runs. a) dry deposition of the oxidized nitrogen, b) dry deposition of the reduced nitrogen, c) wet deposition of the oxidized nitrogen, d) wet deposition of the reduced nitrogen