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Modeling Study of ozone formation/distribution in the southern Iran

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High ozone levels were observed in Southern Iran, Over BandarAbbas coastal area and Persian Gulf, in the summer of 2007 and 2008. Comprehension of the chemistry of the air mass is important in order to develop the most effective ozone abatement strategies. Modeling is a powerful tool to access chemical special with high temporal and space resolution. This study was done using the MM5/SMOKE/CMAQ regional air quality modeling system, together with observational data from satellite measurements over the modeling domain. By validating and improving of simulations based on Taylor's diagram, some scenarios were developed to model the ozone background concentration and understand the sensitivity of ozone to NOx (NOx=NO+NO2) and VOC (volatile organic compounds). Results from an arbitrary reduction of thermal power plants and petrol refineries will be discussed, due to NOx and VOC species in these point source emission inventories. The ozone production rate was extracted from the model and mapped for June 2001 because of a strong interest in determining regions contributing to ozone production and consumption.

Keywords: Ozone; Air quality modeling; Coastal area