



## **Indirect radiative forcing of ozone during the 21st century**

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The response of a coupled two-dimensional radiative-chemical-dynamical model to future changes of the source gasses carbon dioxide, nitrous oxide and methane are explored. The forced changes to ozone are found to be relatively large and the mechanisms for these changes are discussed. These ozone changes are compared to the recovery of ozone due to declining chlorine containing compounds. Since carbon dioxide, nitrous oxide and methane affect ozone they induce an indirect radiative forcing in addition to their direct radiative forcing. These indirect radiative forcings are computed using a combination of accurate line-by-line and band radiative transfer models and are compared to the radiative forcing of ozone during the 1979-2000 time period.