

benefit. If the SO_2 concentration in water is less than that for H_2O_2 in water, then reduction of SO_2 will result in direct reduction of H_2SO_4 formation. It also follows that H_2O_2 reduction will be ineffective in this case.

4. It is reasonable, in the eastern U.S. and Canada, that there are large areas in which SO_2 concentrations are greater and are less than those of H_2O_2 . If such data correspond to greater and lower concentrations of SO_2 in water than H_2O_2 in water, then a single pollutant reduction strategy may lead to non-uniform reduction in H_2SO_4 deposition patterns.
5. Since the LRT models do not utilize the oxidant spatial-temporal concentration fields and the specific oxidation reactions, it is unlikely that they will correctly predict the resulting changes in dry and wet H_2SO_4 deposition patterns due to reductions in concentrations of SO_2 , H_2O_2 , or both.

The likely effects of these types of reductions on H_2SO_4 formation in the aqueous phase are presented in Table 4.2.

The above implications are based on non-linear microscale chemistry that applies to individual events of duration less than one day. While clearly inadequate for describing events, it is possible that the long term (monthly or greater) averages derived from the linear LRT models described in Chapter 7 may give similar results as non-linear models for total sulfur deposition. This behaviour would require other processes either to dominate or to compensate for the non-linear chemical processes. However, the influence of such processes has not been examined or studied to date.