

## ***Interactive comment on “Exploring atmospheric boundary layer characteristics in a severe SO<sub>2</sub> episode in the north-eastern Adriatic” by M. T. Prtenjak et al.***

### **Anonymous Referee #2**

Received and published: 23 March 2009

The authors investigate a severe pollution episode in the Rijeka area by applying the EMEP model as well as fine resolution mesoscale meteorological models.

Since the results of MEMO seem not to be significant for the discussion, the mention and description of MEMO should be skipped.

With respect of the EMEP results it is necessary to show the contribution of local sources to the SO<sub>2</sub> concentrations simulated for the Rijeka region.

The analysis of the mesoscale meteorological situation within the paper shows thoroughly made simulations with WRF and very nice results. However, the conclusions are quite limited due the lack of simulated SO<sub>2</sub> distributions. Some assumptions (e.g. the

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper



Interactive  
Comment

assumed entrainment of high SO<sub>2</sub> from aloft on Feb. 3) could only be maintained if this assumption were supported by simulated SO<sub>2</sub> concentrations. The results of the WRF simulation indicate a regional meteorological situation that is indeed very favourable for the accumulation of high SO<sub>2</sub> concentrations. But as long as there are no chemistry transport simulations included, there is no proof that this meteorological situation will definitely result in that high SO<sub>2</sub> concentrations.

Furthermore, there is no evidence given in the paper whether the simulated mesoscale features are unique and different from other stagnant situations which did not result in such a severe pollution situation. In the introduction the authors mention that weak wind speed and calms are frequent in the region, but are not necessarily indicators of severe pollution episodes. Therefore, the authors should discuss between this particular situation in comparison with other stagnant situations without very high SO<sub>2</sub> concentrations.

The quality of figures 6 – 11 is quite poor and the figures are too small. Arrows for the observed wind could be included into the figures of the simulated wind. This would permit larger figures and also a better comparison of observations and model results.

---

Interactive comment on Atmos. Chem. Phys. Discuss., 9, 6283, 2009.

[Full Screen / Esc](#)[Printer-friendly Version](#)[Interactive Discussion](#)[Discussion Paper](#)