

Interactive comment on “A fate for organic acids, formaldehyde and methanol in cloud water: their biotransformation by micro-organisms” by P. Amato et al.

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In that paper, we investigated a completely undocumented field: the possibility of biodegradation processes in cloud water. It is obviously not possible (or at least not yet) to look at this real environment without bulking the sample. We wanted to determine if microorganisms found there can use some organic atmospheric compounds, and what are the pathways involved. So the first question to answer was: are the microorganisms present in clouds able to be involved in the chemistry when under favorable conditions? In other terms, are they potentially actors of cloud chemistry or do we have just to renounce to such a hypothesis? Considering the sensitivity, relevance and cost of current techniques, we decided that an overall description of the metabolic capacities of the living content of clouds toward the compounds we were interested in

had to be provided first. This description has been made considering a large number of strains that were obviously alive in clouds since they were still cultivable after sampling. Results clearly demonstrate that these microorganisms directly isolated from cloud water are actually very efficient in degrading atmospheric compounds. So they could be unexpected links in cloud chemistry, and we can now go further and improve our model conditions by considering limiting parameters for metabolism like temperature, pH and UV. Some criticism has been made on the methods used, and we are fully aware of the limits they implied. However, it was certainly unclear in the manuscript, and some precisions will be added in the final version by including a discussion on what exactly is learnt from the results.

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 5253, 2007.

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Discussion Paper