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Atmospheric Chemistry and Physics Discussions



# *Interactive comment on* "Technical note: The Lagrangian particle dispersion model FLEXPART version 6.2" *by* A. Stohl et al.

**Anonymous Referee #3**

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## General Comments

The paper includes a thorough and well structured scientific description of the current version of the FLEXPART model, which is an advanced Lagrangian particle atmospheric dispersion model. The subject is thus in accordance with the scope of Atmospheric Chemistry and Physics (ACP). The main elements of the scientific content of the paper have been published elsewhere as shown by the list of references. Additionally, the paper contains computer technical descriptions of the model code including descriptions of in- and output files and references to subroutine file names.

The paper is a "technical note", which according to the definition by ACP

(http://www.copernicus.org/EGU/acp/manuscript_types.html) "should report significant advances and novel aspects of techniques and methods relevant for scientific investigations". This requirement is well fulfilled. However, the additional condition that "manuscripts of this type should be short (a few pages only)" is clearly not satisfied, the manuscript being around 60 pages half of which are contained in an appendix. Consequently, in order to meet this requirement I recommend publication provided that significant reduction of the manuscript is implemented. According to ACP, an electronic supplement containing more detailed information (user manual, program code, etc.) can be provided. I believe that large parts of the manuscript can be moved to such an electronic addition.

## Specific Comments

The careful model description, most of which is published elsewhere, has left me with only few technical comments.

In the Introduction it is mentioned that no attempts have been made to parallelize the code because the model is strictly linear and, therefore, it is most effective to partition problems such that they run on single processors and to combine the results if needed. I fail to agree fully with this statement. Since the model particles are advected (and diffused) independently, there must be a potential for reducing run time by parallelizing (or vectorizing) over the many particles released.

In section 5 it is stated that "to switch between forward and backward runs, the parameter `maxpointspec` is used. It must be set (in `includecom`) to `maxspec` for forward runs and to `maxpoint` for backward runs. FLEXPART must be recompiled upon changing this." I don't see the need for recompilation – please explain.

For dry deposition modelling a reference height of 15 m is used. Please discuss.



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Interactive Comment