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## *Interactive comment on* "Numerical uncertainty at mesoscale in a Lagrangian model in complex terrain" by J. Brioude et al.

## Anonymous Referee #1

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The authors have examined some issues regarding to uncertainties in an off-line Lagrangian model in a reasonable way. I would recommend the paper to be accepted if they can complement their script by clarifying some aspects of Lagrangian modeling.

Introduction

Line 14-15: Can you give explanation why uncertainties in atmospheric transport due to uncertainties from modeled meteorology can be assessed more accurately?

C305

Section 3.1

Line 11-12 (page 975): It might not be valid for any Lagrangian models necessarily, but rather for any off-line Lagrangian models. In a fully Lagrangian framework they would not need to interpolate wind fields calculated by an external Eulerian model.

Line 28– (page 975): How about the dynamical inconsistency that can be aroused by using  $W_f$ ? It might be useful to include some discussion on the issue although you later explained that this approach is significantly less mass conserving.

Interactive comment on Geosci. Model Dev. Discuss., 5, 967, 2012.