Reply to the Editor's comments on revised Manuscript No. ACP-2015-719
by K. Gierens and K. Eleftheratos

Remarks

As the only error the Editor noticed is in the reply to the referees, there are no changes to the manuscript. As submission of a new manuscript is mandatory in the system, we just submit the same revised manuscript again.

1 Error on page 2 of the reply to the reviewers

Sorry, these are simply two misprints. Instead of ΔT it should be Δt in the second and third term. That is, the correct equation reads:

$$\frac{d}{dz}(\Delta T) = \frac{d}{dz}\left(\frac{dT}{dt}\Delta t\right) = \Delta t \frac{d}{dt}\left(\frac{dT}{dz}\right) = \Delta\Gamma.$$

2 Equation 9 of the revised manuscript

Sorry, you are wrong. This is a mathematical identity! Let's do it:

First, let us write $K = H^{-1}$. Now we have:

$$H = 1/K.$$

Take the derivative dH/dK:

$$\frac{dH}{dK} = \frac{-1}{K^2}.$$

from which follows

$$dH = -dK/K^2 = -dH^{-1}H^2.$$

Equation 9 gives just the pure mathematics for infinitesimals. For application in equation 8 we just use the same form, however for the finite quantity ΔH^{-1}, that is

$$\Delta H = -\Delta H^{-1}H^2.$$

The relation between dH and ΔH is analogous to the relation between dT and ΔT, given in the paper between eqs. 6 and 7.