

## ***Interactive comment on “The imbalance of glaciers after disintegration of Larsen B ice shelf, Antarctic Peninsula” by H. Rott et al.***

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Rott et al., (2010) provide a detailed examination of the flux of glaciers feeding the Larsen B embayment. This is of critical interest as it extends our understanding of the duration of the speedup resulting from the backforce reduction when the ice shelf disintegrated. The paper provides exhaustive detail of velocity determination and velocity distribution. At present there are two major issues that must be addressed before this paper can be an important contribution, that I am confident it will be.

1. It is evident that in the absence of thickness data less than ideal methods have to be used. The methods for depth determination is discussed where the data is absent, but the results for glaciers other than Crane not given. As importantly there is no test of the efficacy of the depth determination methodology presented.

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2. A key observation of the paper was " For 2003 the estimates of ice export for individual glaciers in the Larsen B embayment by Rignot et al. (2004, Table 3) are 4 to 6 times higher than our estimates for 2008." I have spent considerable contrasting Rignot et al., (2004) Table 3 flux values and Rott et al., (2010) Table 2. Additional reference must be made to Rignot Figure 3 and Rott Figure 2 and 3 in doing so. On the various glaciers that can be compared the Crane Glacier the discrepancy is close to 2x the flux in Rignot for the Hektor-Green-Evans Glacier it is 6x and for Jorum Glacier it is 4x. This is an important point to clarify. Neither paper provides a table of values used in the flux estimates, this error should not be repeated again. Only velocity is indicated in Rott et al., (2010), though not the value used since it is the centerline velocity, what mean velocity, depth and width were used? It is crucial that Rott et al., (2010) tabulate the values used for flux calculation in the very important Table 2. At present I am left trying to understand how Rignot et al., (2004) determined such a large flux on Crane Glacier and how Rott et al., (2010) calculated such a small flux on Hektor-Green-Evans Glacier.

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