

Interactive comment on “Rapid marine deglaciation: asynchronous retreat dynamics between the Irish Sea Ice Stream and terrestrial outlet glaciers” by H. Patton et al.

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This is an excellent and useful contribution that combines new MBSB data from Cardigan Bay with pre-existing glacial geological data and ice sheet modelling to provide a very clear exposition of the dynamic interaction of terrestrial outlet glaciers deriving from inland Wales and the Irish Sea Ice Stream (ISIS). Whilst many of the key details of this interaction have been known for over a century e.g. early advance of Welsh ice prior to ISIS arrival, lack of ISIS penetration into Tremadog Bay, this contribution provides an integrative overview that combines new analysis of the marine geomorphology with terrestrial sections that, when combined with the ice sheet modelling,

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demonstrates with clarity just how dynamic the interactions of the different outlets of the wider British-Irish Ice Stream were during deglaciation. An important take-home message from this is that internal drivers are as important as large-scale external drivers e.g. sea level, in determining this dynamic interaction. This is something that should be at the forefront of those currently engaged in the BRITICE-CHRONO consortium.

I have made one or two comments on the attached pdf. Just a couple of discussion points:

P290, lines 5-10: it would be worth pointing out here that the IRD record of the BIIS indicates millennial-scale dynamics of the ice sheet (details presented in Scourse et al., 2009 QSR).

P292, point 3: Actually, the evidence points to earlier initial deglaciation than this e.g. the IRD record (Scourse et al. 2009), dated well in deep-sea cores, and re-analysed using the Bayesian approach in Chiverrell et al. (2013), indicates deglaciation during Greenland Interstadial 2 at 23 ka.

James Scourse Menai Bridge 23rd September 2013

Please also note the supplement to this comment:

<http://www.earth-surf-dynam-discuss.net/1/C159/2013/esurfd-1-C159-2013-supplement.pdf>

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