

RESEARCH DEPARTMENT MEMORANDUM



To: RD, FD Division and Section Heads, Evaluation Section

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From: Patricia de Rosnay, Glenn Carver, Frédéric Vitart, Gianpaolo Balsamo, Nils Wedi, Emanuel Dutra, John Hodgkinson, Lars Isaksen, Gábor Radnóti, Tomas Jóhannesson and Sigurdur Thorsteinsson

Date: 28 August 2013

File: RD13-293

Subject: Icelandic glacier mask update in IFS cycle 38r2

1 Introduction

ECMWF revised the IFS glacier mask over Iceland. The new glacier mask was implemented on the fly on 8 May 2013 in the suite 38r2, both in HRES and EDA. It became operational on 25 June 2013.

This research memorandum presents the motivations for this update and it shows the updated glacier mask at different resolutions used in operations. The implementation procedure is presented as well as results from experiments. The Icelandic glacier mask update has a local impact on surface and near surface weather parameters over Iceland. Comparisons between the suite 38r2 and the suite 38r1 are shown and impact on the EFI and ENS products is discussed as well as ongoing actions to account for the revised glacier mask in the re-forecast ENS. This work was conducted in close collaboration between ECMWF and the Icelandic Meteorological Office.

2 Motivations and updated glacier mask over Iceland

The Icelandic Meteorological Office (IMO) reported in 2012 systematic unrealistic cold two-metre temperature forecasts in the highland of Iceland in the ECMWF products. The bias, also present in the previous years, was particularly important in summer. It was due to an overestimation of the glacier extent in the IFS, and resulted in a permanent snow depth of 10 m (water equivalent) present in areas of Iceland which are in reality

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