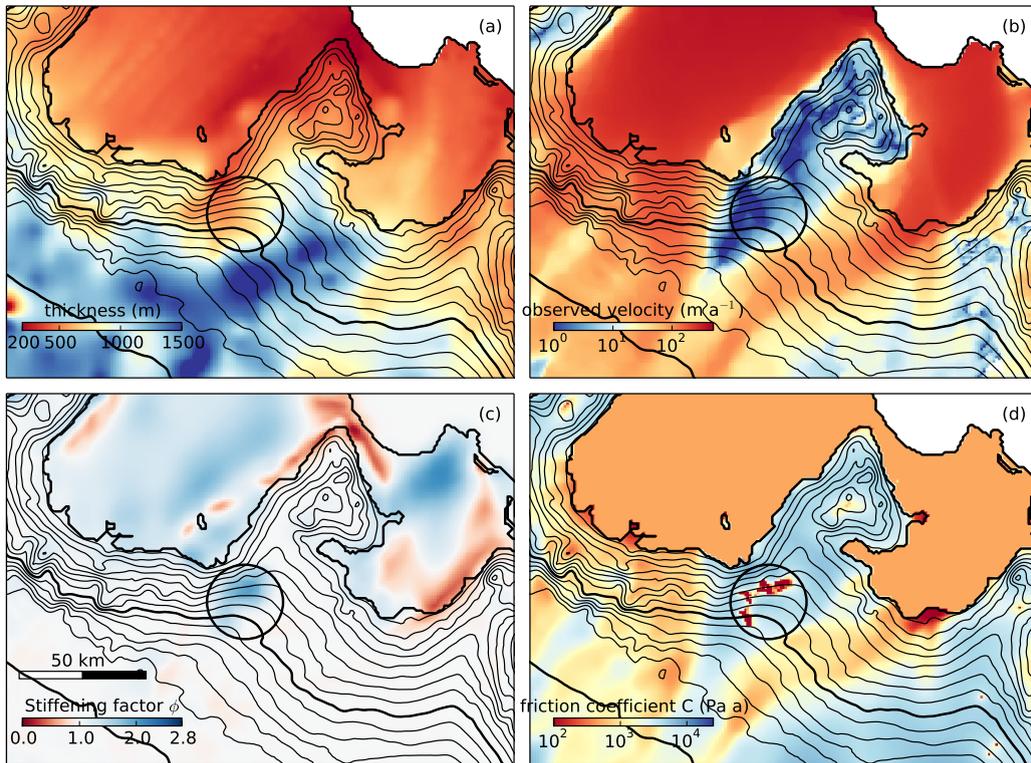


## Supplementary figure 1



Results of the data assimilation for linear sliding focussing on a velocity mismatch area (shown by a circle). (a) Thickness, (b) observed velocities, (c) stiffening factor and (d) friction coefficient. Contours show ice surface height every 50 m in the range 100-800 m.