ADVANCED SYNOPTIC METEOROLOGY

METR 5413

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Problem Set #2

Handed out: Tuesday, 4 Feb. 2020

Due: Thursday, 13 Feb. 2020

In Vol. I: Problems 5.13, 5.16, 5.18, 5.26, 5.28, and 5.37:

1. Consider the height contours (solid lines, dam) and isotherms (dashed lines, 0C) at 850 hPa sketched below. You may neglect the  effect.



Use the Trenberth formulation of the quasigeostrophic  equation to make a qualitative sketch of the  field at 850 hPa (where is >0, <0?). Be sure to show your reasoning. You may assume that the isotherms at 850 hPa are representative of the mean isotherms in a layer centered at 850 hPa. Neglect friction and diabatic heating.