

Interactive comment on “The June 2013 flood in the Upper Danube basin, and comparisons with the 2002, 1954 and 1899 floods” by G. Blöschl et al.

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The authors would like to thank the reviewer for the comments.

The reviewer recommends visualising the GPH fields at the 500 hPa level in Fig. 2. Indeed, the large-scale atmospheric situation is often depicted at upper levels (e.g. 500 hPa), where planetary waves exhibit much smoother patterns and are mathematically treatable with a simple dispersion equation. The authors began the research by looking at such levels. Then, noting that the situation at such higher levels does not translate straightforwardly down to the surface, it was deemed important to look at the surface

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situation as well. In the particular case of blocking, having observed standing waves at upper levels of the atmosphere, the authors then looked at the near-surface (1000 hPa) situation as well, in order to evaluate whether there were large-scale stationary patterns at that level as well. Given that a) the link between the synoptic situation at 500 hPa and the persistence of surface patterns might not be straightforwardly visible to readers less familiar with Dynamic Meteorology, and b) large-scale stationarity in surface patterns was nicely seen in the contour shapes of the plotted 5-day means of geopotential height at 1000 hPa, the authors opted to provide the geopotential height fields at that near-surface level. The authors will mention having observed standing waves at 500 hPa level (not shown) as well.

The reviewer suggests providing more detail on the “Vb way” for readers who are not familiar with cyclone tracks over Europe. The authors acknowledge that the expression “Vb”, while locally known in Central Europe, may not be internationally recognisable. The sentence will be revised as: “As the system positioned itself over the Alpine area, its cyclonic, counter-clockwise rotation and spatial extent allowed it to collect additional moisture from the Mediterranean, feeding in particular from local depressions in the Ligurian and Adriatic seas (Fig. 3), and advecting that additional moisture cyclonically into Central Europe. This regional cyclonic track is known in Central Europe as “Vb”, after van Bebbber (1891)”.

The reviewer suggests adding an overview map illustrating the location of the Upper Danube basin in Europe and showing the places (climate stations) mentioned. Given the size and visibility of the Danube basin the authors believe that such an overview map is not necessary. On the map in Fig. 1 the climate stations mentioned are very close together (and close to the gauges referred to), so showing them would not provide much additional information while cluttering the map. The authors therefore prefer to keep the map as it is.

The reviewer suggests to be more explicit when referring to “long term means” which the authors will do in the revised manuscript.

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