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Climate of the Past Discussions

Interactive comment on "Climate signatures of grape harvest dates" *by* M. Krieger et al.

Anonymous Referee #1

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This paper analyses the relation between the Grape Harvest Dates (GHD) series of Burgundy (France), published in Chuine et al. (2004), and climate parameters (temperature, SST, SLP and total cloud cover). The main result of the paper is that the GHD is connected to April to August temperature. A second order relation between GHD and winter temperature is evidenced. The authors points to a non stationarity of the GHD-winter temperature relation which is attributed to the non-stationarity of winter-summer temperature. As the dependence of GHD to April-August temperature as been evidenced in several publications (Chuine et al., 2004; Menzel, 2005 ; Meier et al., 2007 ; Etien et al., 2008, 2009 ; Garcia de Cortazar et al., 2010), the main result of the paper cannot be said new. The significant correlation between GHD and low-pass filtered winter temperature is new and very interesting and would deserve more investigation. The other results are not very convincing. The authors indeed tend to over-interpret correlations which are low or even not statistically significant. The added value of the

correlations of GHD with SLP, cloud cover and SST is slight. Specific comments: Page 1528: The authors evaluate the strength of the correlation between the GHD series and the four seasons near surface temperatures from CRU. They conclude that GHD is poorly correlated with winter (DJF) temperature (in some regions of Ireland, Spain and Morocco), strongly with spring (MAM) and summer (JJA) temperature and not with autumn (SON) temperature. This last result is quite comforting as harvests take place generally in September that is at the very beginning of autumn. Even if the authors evaluate the effect of one year and two years lag, considering a different cut-out, complying with the biological year (beginning in October), would be more judicious. Page 1529: The authors calculate running correlation coefficients between the GHD series and an index of April-to-August temperature over France. How is this index calculated? It is succinctly said in page 1531, but should be explained here. There may be a benefit of using such index rather than local (Dijon for instance) homogenised temperature series, but it should be discussed in the paper. It is shown that the correlation between GHD and France temperature Index increases, from r=-0.6 to r=-0.85, over the last century, being centred on 1975. Cannot this improvement of the correlation be related to the fact that there is a steep trend in the French temperature series since ca. 1975 (and a correlative GHD trend)?

Page 1530: Line 14: the authors say they investigate the relation between April-August index temperature and the other dataset... but do not show any result (but in figure 10b) while it is an important element towards understanding the meaning of the GHD – climate parameters correlations. Line 24: "All of Europe is correlated slightly negative. Only Asia Minor has a slightly positive correlation": As can be seen in figure 2a, all these correlations are not statistically significant anyway. Page 1531: Line 3: "If the total period is partitioned": the authors cut arbitrarily the whole series in two equal parts (before and after 1947), while the turning point they have identified previously is 1975. Do they obtain different results if they change the partitioning? Line 6 "In the time section from 1901 to 1947, the entire European mainland is positively correlated": The correlations, again, are not significant. "In the time period 1948-2002, all of Europe

has a strong negative correlation": can r≈-0.3 be said strong?... Page 1532: Line 19: Again, I think the authors want to say too much from correlations which are not statistically significant. Page 1536: Line 11: 'the results of the period from . . .are opposed": Is it a rigourous approach to say opposed some patterns when at least one of the two is under the significance level. Page 1537: Line 4: "If warm (cold) winters. . .This occurred in the first half of the 20th century": Where is it shown in this paper??

Interactive comment on Clim. Past Discuss., 6, 1525, 2010.