This paper presents an approach to transfer model parameters from the gauged catchments to ungauged catchments based on the similarity between donor and receptor catchments. This approach was implemented to a SWAT application in the Mediterranean catchments. Parameter uncertainty and prediction uncertainty were studied and discussed. This paper is suggested to go through a major change before accepted based on the major comments below.

Major comments:

1. The English is too descriptive (not scientific) and could be shortened
    a. Highlight the approach. It took me a while to understand the procedure
    b. Some texts which are not the main focus could be removed: e.g., too much sentences on GLUE (e.g., comments), attributing wide uncertainty in baseflow to Karst (actually the main reason is the objective function NS which is favorite of the high flows) while this paper has nothing to do with the Karst, etc.
2. Validity of the proposed technique
    a. The threshold of objective function NS. The authors chose NS >0. I doubt about this. In the literature, suggested "NS"s are greater than 0.5 or 0.6 for daily flow otherwise the model should be improved. When NS = 0, it means the simulation is no better than the average observed value. Low NS leads to wrong explanation of model behavior and uncertainty analysis.
    b. There is no validation process of this technique. The validity is not sure.
    c. A comparison could be made to the following approach:

        1) Parameterize the SWAT with available DEM, landuse, soil and climate data for all the catchments based on SWAT pre-process procedure.

        2) Apply GLUE with SWAT runs on all the catchments at the same time. Parameters which are "behavioral" for the two gauged catchments are behavioral to other ungauged catchments

        3) compare the result of this approach with proposed approach by author.

Minor comments:

1. The equation (1) is not correct
2. Line 7 of Page 4966: Should "a selection" be "the selection"?
3. Line 13 of Page 4966: what are the references in "in the literature"? Actually, weather data are the driving force
4. More scientific explanation on "% clay, %silt, %sand" in line10 of page 4967
5. Rewrite lines 1-7 of page 4968. Lines are not well written.
6. Line 11 of page 4972, I doubt about it.
7. Expect explanation of lines 4 to 6 of page 4974
8. Line 17 of 4975, should "receptor(s) catchment(s)" be "receptor catchments"?
9. Equation (6), why there is no evapotranspiration?

10. Tables 1 and 2, adjust numbers
11. Figure 3, use normal dates instead of Julian dates
12. Figure 10. Better texts for “WYLD”, etc.