We are thankful for thoroughly reading the paper and for the constructive comments that important to improve the quality of our paper.
We modified according to the advices of reviewer and addressed each comment in their original order as follow:
Major comments:

1. Anonymous referee curious about the impact of underlying properties and the glacier freezing and thawing on runoff scaling.
Underlying properties are important for the runoff processes. In our paper, we discussed the influence of vegetation cover and soil character to the precision of simulation results.
Besides, glacier runoff is the main recharge resource in research area. Glacier runoff has a significant positive correlation relationship with the temperature. Glacier and snow freezing and thawing also have important influence on simulation results. The percentage of glacier runoff account for the whole runoff decides the precision of regression model, especially in dry season.
However, observation system of snow thawing and glacier runoff was installed few months ago and the data are not integrity. We can not figure out the effect of glacier and snow on runoff exactly.
We will focus on these problems in the future.

2. Some applicability of regression methods in other catchments were supplement already according to the advices of referee.
Regression methods were widely applied in the research of hydrological processes. Boers (1986) and Schwarzmaier (2006) using a linear regression model to simulate the complete hydrological process in an arid zones and southeast of North America respectively, the simulated results and observed results showed an excellent coincidence. However, simulations are particularly difficult to make in alpine regions, where data are sparse and the spatial variability of both precipitation and physical controls on runoff generation is huge. Chen et al. (2002) found that monthly mean runoff and monthly precipitation in Heihe River mountainous watershed has a perfect linear relationship, and the relationship between the monthly mean runoff and the monthly mean air temperature is exponential. Using nonlinear dynamics method, a model including monthly mean runoff, monthly precipitation and monthly air temperature is putting forward and this model can predicate monthly runoff.

3. The manuscript is modified some grammatical errors.

Minor comments:

1. The main scale methods in hydrological application were reviewed based on the suggestions.

2. P4, Line 14 was changed to ‘Based on the hydrological processes monitored in the research watershed from 1990 to 2008, the objectives of the present study were (1) to determine the nature of scale effect for seasonal hydrological processes, and (2) to establish quantification scaling models of runoff processes with different parameters in the alpine catchment.

3. Comment 3and 4 asked the details of observed system. How many meteorological stations in our research area?

In research area, the observation system contains only one meteorological station to observe conventional climate factors (see Fig.1 in manuscript), one groundwater observation site. Besides, we have additional instruments only observed the air temperature and precipitation near the outlet in each sub-catchment.

4. Comment 5 thought that it is not clear that which parameter was regressed as a function of scale K in Eqs 6, 7, 8 and 9. The detailed introduction was asked to provide.

ak were the coefficients (i.e. the coefficients of precipitation or temperature in the regression equation) and the constants in relationship equations.

Take the Eqs 6 as an example, the regresstion process was showed as follow:

First of all, we build the relationship between runoff and temperature in each catchment. The results were showed in Table 2 in manuscript.

Then, the relationship between the constants of each equation (i.e. 4.237, 0.2894, 0.0376 and 0.03 in table 2) and relatively catchment area were built. After that, we can get a relationship equation:

$$R(k_{constant}) = 0.0532k - 0.0183$$

The relationship between the coefficients of temperature (i.e. 0.0909, 0.1228, 0.187 and 0.2294 in table 2) and catchment area was built in the same way.

$$R(k_{coefficient}) = 0.1891k^{(-0.1765)}$$

Finally, the two equation of R(k) were substituted into Eq. 3 $(Q_k = F(P_k, a_k))$ in the manuscript, and the final scale modle is (Fig. 3):

$$Q = (0.0532k - 0.0183)e^{0.1891k^{(-0.1765)}T}$$

5. Comment 6 asked whether the lagging time effect between runoff and temperature be captured by the regression equations in the paper.

Cross-correlation analysis between calculated runoff and temperature found that the lag time of calculated runoff was similar with the observed runoff. The effects of time lagging do not captured by the regression equations in the paper.

6. Comment 7 asked the causes of the Nash coefficient of the whole year is larger than those of the dry and wet seasons.

There were some errors on the calculated method about the Nash coefficient of the whole year when I consulted reference articles. Putting two different results calculated by different methods together is erroneous. I correct my faults in the manuscript.

7. Comment 8 asked the causes of the Nash coefficient of daily mean runoff simulation is larger than the Nash coefficient of monthly mean runoff simulation?

Monthly data was the average value of daily data in each month. Based on these average values, to simulated might reduce the fluctuation ranges of individual factors, and thus reduce the sensitivity of runoff in response to climate factors, which to a certain extent affects the simulation accuracy of the monthly model.

8. Based on Comment 9, P13, Line 16 was changed to ‘Gao et al. (2002) studied the hydrological process in the research area on Gongga Mountain.’

9 Comment 10 asked the quoted of Merz et al. (2006) is different from our statement. The quoted of Merz’s results is confused our conclusion.
The quoted of the Merz et al. (2006) in manuscript wanted to explain Merz`s conclusion was inapplicable in our research area. Merz found that soil and land use characteristics had low degree of impact on runoff processes. However, our researches demonstrated that land cover and its related soil characteristics had an important influence on the runoff processes in research area.

10. Comment 11 said there are some contradictions in the authors’ statements.
The main conclusion is underlying properties has important influences on runoff processes. The contradictory and ambiguous statements were clarified or removed according to the advice of reviewers.

11. Based on the comment 12, P12, Line 10 was changed to ‘The simulation results of monthly and daily scale have the similar characters.’

12.Table 1 and Table 2 are merged together in the manuscript.