Referee's comment:

1. On Clarity: Methods were presented in an exceedingly confusing and unclear and imprecise manner. Results were then obscurely derived. Therefore it shows insufficient interest to HESS readers and fails to make a convincing case.

Author's response:

The aim of the separation of flood season of reservoir is to make better flood regulation schemes, which can make better use of the surplus water in flood season and increase benefits, such as by generating more electricity, without extra construction cost. Therefore, the statistical development of flood frequencies for sub-seasons within the annual flood season has potential to improve multipurpose reservoir system operation.

1) The first conventional statistical method used in this article is a basic one to separate annual flood season, which calculate the accumulative frequencies in flood-prone period and then obtain the separation result.
2) The Fractal method, which is more complicated, focus on the fractal dimension of each sub-season. With an assumed time length of a sub-season, its fractal dimension can be obtained. When prolonging the time length of the sub-season, a different fractal dimension can be obtained and by comparing these two fractal dimensions it can be determined whether the flood pattern in this long period of time has a feature of self-similarity. If the two fractal dimensions are nearly the same, then the time length of the sub-season is the prolonged one. Keep going in this way, then the whole flood season can be separated into several sub-seasons based on different fractal dimensions.
3) The Von Mises method uses the Von Mises distribution to simulate the pattern of flood timing, based on which accumulative flood frequencies can be obtained and then flood season can be separated into sub-seasons.
4) Applying the three methods to the separation of the flood season of Hongfeng Reservoir in the case study(Table .1, 2, 3), this paper then accordingly conducts flood regulation calculation (Table 4) under three different regulation strategies (open-discharge strategy, strategy for operating in 1987 and strategy for check in 1990). Based on the flood regulation calculation in sub-seasons, we obtain the different ranges of flood control level in each sub-season with the fixed flood control level of the original plan as the lower limit. As you can see in figure 5, there is a raise of the flood control level in each sub-season and with different methods for separation comes different flood regulation calculations and thus flood control level is raised to different extents. Under the requirement of flood control safety, adopting the new operation plans can help increase the total benefits of reservoir, especially in electricity generation and water supply, etc.
5) The core ideas of the three methods are stated above and clear, and details on how to realize what the methods try to achieve are given in the paper. Following the core ideas and the specific steps presented in the paper, researchers in this field can also conduct similar studies.
6) As for reader's interest, since published in discussion on Oct 14th, quite a few readers （total article views: 209, including HTML, PDF, and XML) have come to view this paper, showing their concerns and interests in this paper.

(http://www.hydrol-earth-syst-sci-discuss.net/12/10431/2015/hessd-12-10431-2015-metrics.html）

HTML	XML	PDF	Total	BibTeX	EndNote
73	105	31	209	17	11

Referee's comment:

2. On Novelty: Obviously, this study presents no novelty to the existing state of the field covered by HESS.

Author's response:

1) Theoretical significance: as mentioned before, operation in sub-seasons can increase benefits of reservoir. Yet, apparent shortcomings still exist in the methods used to separate flood season, which are usually not able to reflect the flood changing pattern in flood season. Thus, it's necessary to do researches and make comparison between different methods in this field.

2) Practical significance: operation in sub-seasons is an important way to optimize flood control operation and increase the benefits for hydropower stations. Moreover, it's beneficial in the long term. Despite all these advantages, it hasn't been adopted yet by most of the reservoirs in the world. From this point of view, The methods proposed in this paper for conducting operation in sub-seasons have a broad prospect for application in reservoir operation in flood season, design flood estimation at construction stage and flood control risk estimation, etc. With the world's largest potential hydropower resources of 680 million Kw, China has 86 thousand reservoirs, most of which should adopt operation in sub-seasons according to their specific flood conditions. Inspired by this context, this paper makes a comparison among three different methods.

3) Because the ultimate goal for flood season separation is to raise the previous fixed flood control level considering different reservoir conditions in different sub-seasons. And flood season separation is significant in determining flood control levels in different periods of time in flood season, allowing better reservoir operation within different flood sub-seasons. Dynamic change of flood control level in flood season is an emerging field in which relevant researches are scarce, due to the deep-rooted conventional mindset that flood control level should be fixed in the whole flood season.

4) This article is mainly concerned about the separation of flood season, yet actually it also has a lot to do with the dynamic control of flood control level in flood season. There were only a few papers published in recent years about the dynamic control of flood control level, such as Joint operation and dynamic control of flood limiting water levels for mixed cascade reservoir systems (published by Yanlai Zhou et al on Journal of Hydrology in 2014) and "Optimal design of seasonal flood limited water levels and its application for the Three Gorges Reservoir" (published by Pan Liu et al on Journal of Hydrology in 2015).

So in general, this study presents a novelty.

Referee's comment:

3. On Referencing: The manuscript have over-cited (grey) papers/reports which were written in Chinese or/and inaccessible to international readers. One can easily get lost in this hidden context.

Author's response:

1)As mentioned before, researches in this field are scarce while there were some relevant

studies in China in recent years, so the papers cited in this article are mostly published in China by Chinese researchers.

2) We selected a reservoir in China to do case research, so the latter calculation should be consistent with the specific Chinese regulations about reservoir and hydro-projects, and existed flood regulation results in those reports. But the methods proposed in this paper can also be applied to reservoirs or projects in other countries considering that most of the world's reservoirs adopt fixed flood control level which is the upper limit for reservoir water level in flood season.

3)A particular case study is done in particular context but the methodology is universal because the ultimate goal is to separate the flood season reasonably and then raise the fixed flood control level in sub-seasons to create more benefits.

4) The attachments are the Chinese papers cited in this article and links to these references are as follows:

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