Referee #1

This paper studied the response of three dimensions of biodiversity of grassland in different periods of climate change, and formed a theoretical framework for their impacts on community biomass, based on 152 grassland sites set on Mongolia Plateau. It's a good job.

My only concern is that, were the community biomass measured in the same year or not? If there're measured in the same year, is it a good year or a bad year (biomass always varies greatly from year to year, especially for grassland)? Data matching is always a big problem. Data on meteorological and plant functional traits used in this paper are obtained as interpolated or observed averages, whereas data of community biomass are measured values.

Answer： Thank you very much for your comments. Community biomass is not measured in the same year. The modern climate used in this study is the average of the climate data from 1979 to 2013, which is a relatively long-term data. The data can reflect the current climatic gradient of the whole Mongolian Plateau. Observed mean values were used for plant trait data in this study, which is also used in many documented studies to reflect modern plant functional traits. In this study, the current climate, plant functional traits and biomass data reflect the current state. The spatial-temporal scale of this study is larger, and in the context of long time series, the impact of short-term fluctuations (i.e. the modern climatic factors) is relatively small.

Minor commences:

Line 10: Pastoral

Answer： I have amended this.

Line 49: 'biodiversity and ecosystem functions' is not one word.

Answer： I have changed it to "ecosystem functions".

Line 60: the abbreviation of BEF is not appropriate here.

Answer： I have removed the abbreviation.

Line 80: need reference.

Answer： I added references.

Line 82: the location of the reference is inappropriate.

Answer： I have removed the inappropriate reference.

Methods: Why five indicators of functional diversity were selected, while only three indicators of other two kinds of diversity were selected? Would it affect the results of their “relative effect”?

Answer： First, the five functional diversity indicators present different aspects of functional diversity. The functional richness (FRic) represents the amount of niche space occupied by the species within a community. The functional evenness (FEve) is used to represent the evenness of the distribution of abundance in niche space. The functional divergence (FDiv) reflects the degree of niche differentiation within a community. Rao’s quadratic entropy ((Rao’s Q) represents the difference between species and its proportion in the community. Functional dispersion (FDis) can be applied to multi-dimensional traits space and various types of traits. Secondly, in many research on the relationship between biodiversity and ecosystem function, the number of indicators for each dimension of biodiversity is different (Kang et al., 2020; Jochum et al., 2020; Le Bagousse-Pinguet et al., 2019). Finally, according to the results of this study, although functional diversity has five indicators, it has the least impact on biomass. Therefore, this does not affect the results of the “relative effects”.

Discussion: the answer to science question 3 needs to be strengthened in the discussion section.

Answer： We added that in the discussion section.