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## ***Interactive comment on “Impact of cloudiness on net ecosystem exchange of carbon dioxide in different types of forest ecosystems in China” by M. Zhang et al.***

**M Chen (Editor)**

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This paper presents an interesting study about the influence of cloudiness on carbon fluxes in a subtropical and a temperate forest. Different influences are found in these two different forest ecosystems. However, the following issues need to be addressed in revision: 1. The reasons for the different responses of GEP to cloudiness in these two forests are not clear. Why does GEP in CBS decrease at high clearness? It's not convincing that this is due to the decrease in diffuse radiation because trees would benefit from higher direct radiation. Are there any direct temperature effects on GEP as air temperature increases with clearness at this site? Does it get too hot? There

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could be different temperature response curves for GEP at these two sites. Would it be caused by water stress at high temperatures? I strongly suspect that soil water plays an important role for the decrease of GEP at high clearness. Some more detailed analysis is needed. 2. Different responses of ecosystem respiration at these two sites may be due to different soil organic matter contents. Do you have any measurements of soil organic matter? 3. It is not clear how cloudy sky and clear sky are separated. Do you use a threshold on Kt for this separation? The units or phrases in Table 1 have many errors. For example, precipitation = 70 m, and soil temperature in cm. What's "height of radiation"? Make sure you mean the height of radiometer, or height of rain gauge. How can you measure precipitation at 70 m when the tower is only 32 m? The English text has many grammatical errors and unclear passages. It needs to be thoroughly edited by an experienced English writer.

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**BGD**

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