

Interactive comment on “Climate and music (Toward development of the interdisciplinary climate and cultural understanding education of ESD with special attention to the seasonal cycle and “seasonal feeling” around Japan and Europe)” by Kuranoshin Kato et al.

Anonymous Referee #1

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<Overall comments> This paper is a unique interdisciplinary attempt to integrate the knowledge on regional climate and music in order to educate some of the fundamental ESD literacies, such as thinking of various complex relations, diversity, understanding of heterogeneous others to university level students by the authors several educational activities conducted in Okayama prefecture, Japan. While climate, or more precisely in this article, climatic seasonal changes in different regions can be more easily treated as objective methodologies, how to treat its counterpart “music” or cultural matters in

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objective scientific ways will be a hard task. The authors set three targeting issues in Japan and Europe. 1. Asymmetric seasonal feeling between early winter and early spring in Japan. 2. Seasonal feeling in Germany focusing on mid-winter “Fasnacht” for driving winter away. 3. Seasonal feeling in North Europe focusing on summer solstice festival. The selections of these specific seasonal events in each region are uniqueness of the authors perspective, and still there remain some ambiguity on how to express such feelings in scientific ways, their educational examples show at least partly the effectiveness of their approaches in university education. The reviewer is not familiar with the overseas situations, but this will be a quite unique educational attempt to understand the global diversity through climate and music. Therefore, it will be worth describing their educational results on this matter. There are, however, some of the issues from a view point of climatological seasonal cycles in this paper as pointed out below. Therefore, the paper needs minor/major revisions.

<Major comments> 1. Since this paper deals with regional climate, it will be better to add some references on the general regional climate features, for example, Arakawa and Toga (1969) for Japan, Schüepp and Schirmer (1977) for Germany, and Johannessen (1970) for Scandinavia. 2. Climatological six seasons in Japan, Maejima (1967) will be the first to identify these natural seasons, different from the traditional “four seasons” in mid-latitude regions. Arakawa and Tsuga (1969) also stated Japanese 6 seasons. Better to refer this paper on the Japanese climatological seasonal cycle. 3. The weather phenomena “Shi-gu-re” and the early spring snow “Awayuki” will be typically occurred in the semi-Japan Sea side climate situation (Suzuki, 1962), such as in Kyoto, but may rarely occur in the Pacific side climate such as in Okayama. This will be a big issue in regional climate recognition in Japan when educating this in Okayama. In addition, need to add the location of Okayama and Kyoto where most of “Waka” in Table 1 will be read in Fig. 5, and such information should also be elaborated on related with Table 1. 4. A number of regional different characteristics in seasonal cycles in Japan and Europe has been pointed out, but isn’t it based on the different nature of the so-called “west coast” and “east coast” climate? Why winter

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temperature variations are larger in Europe compared in Japan? 5. The authors seem to show the severity of winter in Germany or North Europe only by temperature. Is it enough to show the severe winter feeling in Europe? 6. Non-English words are better to be written in *Italic*.

References: Arakawa, H. and Taga, S. 1969. Climate of Japan. In Arakawa, H. ed. *World Survey of Climatology*, 8: 119-158, Amsterdam: Elsevier. Johannessen, T.W. 1970. The climate of Scandinavia. In Wallen, C. C. ed. *World Survey of Climatology*, 5, 23-79, Amsterdam: Elsevier. Maejima, I. 1967. Natural season and weather singularity in Japan. *Geographical Reports Tokyo Metropolitan University* 2: 77-103. Schüepp, M. and Schirmer, H. 1977. Climate of Central Europe. In Wallen, C. C. ed. *World Survey of Climatology*, 6: 3-73, Amsterdam: Elsevier. Suzuki H. 1962. Classification of Japanese climates. *Geographical Review of Japan* 35: 205–211 (in Japanese with English abstract).

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