Dear Editor,

We have revised the paper "Minimal dynamical systems model of the northern hemisphere jet stream via embedding of climate data" according to the reviewers' and editorial suggestions. A detailed overview of the answers is given below. Thank you for considering our work for publication in Earth System Dynamics.

Best Regards,

Davide Faranda


```
REFEREE 1

Recommendation: Accept after very minor corrections.

General Comments:

The article is now very much improved and generally suitable for
publication with just a few typos and cosmetic changes to be fixed. It
provides analysis techniques which should be of general interest to
the ESD readership as well as a very simple data driven model of regime
transitions of the atmospheric zonal flow.
```

We thank the reviewer for appreciating our revision.

```
Specific Comments:

P6, line 30: 2018 -> 2019
```

Corrected

```
P8, line 23: "There is also some indication of westerly propagation of
the clusters": I found this a bit puzzling at first since blocks
generally develop upstream of the blocking region and then lock into
place with some subsequent oscillations about the central position.
However, the largest signal will probably come from the largest scale
planetary waves which will tend to retrogress. So maybe the
retrogression is not a signal of blocking so much as of planetary wave
retrogression? No action is required here.
```

This is definitely an interesting line of research. In a future work, we will address this problem by extending the current model with the information ofn the maximum velocity

```
P8, lines 29-30: Brackets around the references.

P9, line 4: ?? -> 7

P9, line 12: sea > see
```

corrected

```
References:
```

The references need to all be made consistent with ESD requirements in terms of page numbers, capitals and shortening of journal titles etc. The following reference was incomplete
Kitsios, V., and J. Frederiksen, 2019: Subgrid parameterizations of the eddy-eddy,
eddy-meanfield, eddy-topographic, meanfield-meanfield and meanfield-topographic
interactions in atmospheric models. J. Atmos. Sci. 76, 457-477, (2019). doi:10.1175/JAS-D-18-0255.1

corrected

REFEREE 2

Authors have substantially improved the paper after revision. Most of the critical comments from previous round have been also addressed. Still, it is not clear how exactly the optimal model parameters were estimated, for example A, beta, c in equation 3, and parameters of the noise (line 4 on p. 8). Was it by trial and error or some cost function was minimized? Either way, it should be clarified in the text.

We thank the referee for the comments. We have specified tha we used a trial and error procedure (page 8 line 4)