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Referee Report on the PhD thesis

Chimera states in coupled multistable attractors

By

Dawid Dudkowski

Dawid Dudkowski intends in this thesis to study a special form of complex behaviour, chimera states in coupled attractors which are characterized by multistability. This is a very difficult problem of high actuality and importance.

The thesis are subdivided into two main parts : first an introduction and overview and second five original papers of the candidate which were already published in well-known and internationally leading peer-reviewed journals. It is very important to emphasize that Dawid is the first author of all these 5 papers !

To summarize : Dawid Dudkowski has presented a very substantial thesis with a lot of important results on the existence of Chimera and more general hidden and chaotic attractors. He has exhibited various typical transitions among co-existing regimes and has even uncovered new types of Chimera. Most of the work refers to basic models and their analytical and numerical analysis is very deep. Moreover, he has also demonstrated the existence of Chimera in experiments with mechanical oscillators.

I expect a strong impact of his results.

Therefore, I very strongly recommend to accept the thesis of Dawid Dudkowski.

Jürgen Kurths

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Chair of the Research Domain Transdisciplinary Methods at the
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Kind regards,



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