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Patterns on spatially structured domains

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Stellingen

Behorend bij het proefschrift
“Patterns on Spatially Structured Domains”
van Willem Schouten-Straatman

- (I) The spectral convergence method is a very powerful tool to lift the existence and spectral stability of travelling waves between fundamentally different reaction-diffusion systems and it can be applied in various, distinct settings (Chapters 2-4).
- (II) A thorough understanding of the underlying limiting system is essential in order to apply the spectral convergence method (Chapters 2-4).
- (III) The alleged nonuniqueness of travelling wave solutions in fully discrete reaction-diffusion systems would be the most important qualitative difference with continuous or semi-discrete systems, but it remains unclear how to establish this nonuniqueness analytically (Chapter 4).
- (IV) Infinite-range interactions in functional differential equations of mixed type give rise to some very interesting and surprising behaviour, which can be very different from the finite-range counterpart (Chapter 5).
- (V) In the dynamical systems community, functional analysis is seen too much as a tool, instead of a theory that is interesting and beautiful in its own right.
- (VI) Differences in nomenclature between various fields in mathematics can make mathematical texts harder to read than necessary and authors should be more mindful of this.
- (VII) Building a model by first simplifying it as far as possible and then slowly adding different generalizations is good mathematical practise that other fields in science should adopt.
- (VIII) Page limits in mathematical journals are obsolete, since these journals are distributed mostly online, and they can have a negative impact on the quality of papers.
- (IX) It should be much easier and more customary for both authors and readers to correct errors, big or small, in published papers or retract parts of a published paper in order to prevent others for making the same mistake or building on incorrect results.
- (X) Keeping in contact with researchers all over the world is easier than it has ever been due to modern communication tools. As such, universities and grant distributors should reconsider the requirement that young academic researchers work abroad for several years, especially in times of a pandemic and a changing climate.