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## Approach to Markov operators on spaces of measures by means of equicontinuity

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# Stellingen

*Behorend bij het proefschrift "Approach to Markov Operators on Spaces of Measures by means of equicontinuity"*

- I. The main question in various real-life situations is how to decide on the size of interventions and the time intervals between them so that we get to the required results. The most prominent examples are provided by the questions our governments ask for almost a year now.  
*Chapter Motivation of this thesis*
- II. For the space of signed measures on a Polish space, equipped with the Dudley norm, in view of Corollary 2.3.8 and Proposition 2.3.9 one might be tempted to conjecture that the weak and norm topologies would coincide on sets of measures with uniformly bounded total variation. This does not hold however.  
*Chapter 2 of this thesis*
- III. Markov semigroups on measures that are neither strongly continuous nor consist of bounded linear operators for the relevant norms, deserve more attention in mathematical research than they receive currently.  
*Chapter 3 of this thesis*
- IV. Studying the e-property a natural question is whether any asymptotically stable Markov operator satisfies this property. This is not the case, nor for the Cesàro e-property.  
*Chapter 4 of this thesis*
- V. As much as a strategy to deal with complicated mathematical problems is to "divide and conquer", that is not a universally applicable strategy outside theoretical math.  
*H. Holden, K.H. Karlsen, K.-A. Lie, N.H. Risebro, Splitting Methods for Partial Differential Equations with Rough Solutions, European Mathematical Society, 2010*
- VI. It is an understatement that the only prerequisites for understanding the General Topology by J.L. Kelley are the knowledge of a few of the properties of the real numbers and a reasonable endowment of that invaluable quality, mathematical maturity, as claimed by the author.  
*J.L. Kelley, General Topology, Springer 1955*
- VII. When finding a gap in the proof, one shall try to search for a counterexample.  
*S.P. Meyn, R.L. Tweedie, Markov Chains and Stochastic Stability, Second Edition, Cambridge University Press, 2008*
- VIII. A simple counterexample can lead to extensive research.  
*K. Engel, R. Nagel, One-Parameter Semigroups for Linear Evolution Equations, Springer 1999*
- IX. Water has no memory.