DYNAMICAL SYSTEMS SEMINAR

Non-compact Positive Operators on Banach Lattices, its Maximal Eigenfunctions and Applications in Ergodic Theory

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Abstract. The aim of this seminar is to present a new construction of *equilibrium states* in Ergodic Theory based purely on Functional Analysis techniques.

The first part of this seminar will be dedicated to explain our Ergodic Theory setting in terms of Functional Analysis and then how to obtain the *equilibrium states* from the maximal spectral data of the double Banach transpose of a suitable extension of the classical *Ruelle transfer operator*.

In the second part, we will discuss the main steps behind the proof of a version of the famous *Ruelle-Perron-Frobenius Theorem* for such linear operators.

At the end we will explain how to extend our results in order to obtain eingenfunctions associated to the spectral radius of a large class of positive operators acting on infinite dimensional (reflexive and non-reflexive) Banach lattices.

References

[1] L. Cioletti, A. C. D. van Enter, and R. Ruviaro: *Double transpose of the Ruelle operator*. Preprint-Arxiv, 2018.