SNSB Summer Term 2013 Ergodic Theory and Additive Combinatorics Laurențiu Leuștean

02.07.2013

Seminar 8

(S8.1)

- (i) $\mathcal{S} = \mathcal{C} \cup \{\emptyset\}$ is a semialgebra on $W^{\mathbb{Z}}$.
- (ii) $\mathcal{B} = \sigma(\mathcal{S}) = \sigma(\mathcal{C}_e).$
- (iii) \mathcal{B} coincides with the Borel σ -algebra on $W^{\mathbb{Z}}$.

(S8.2) Let $A \in \mathcal{B}$.

- (i) $A \setminus A_{ret}$ is wandering.
- (ii) $A \setminus A_{inf} = A \cap \bigcup_{n \ge 0} T^{-n} (A \setminus A_{ret}).$

(S8.3) Let (X, \mathcal{B}, μ, T) be a MPS. If $A \in \mathcal{B}$ is such that $\mu(A) > 0$, then there exists $1 \leq N \leq \Phi$ such that

 $\mu(A \cap T^{-N}(A)) > 0,$

where $\Phi = \left\lceil \frac{1}{\mu(A)} \right\rceil$.