

Zero-one law of orbital limit points

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In 2012, Kit Chan and Irina Seceleanu obtained a remarkable result on the dynamics of unilateral (or bilateral) weighted backward shift operators on $\ell^p(\mathbb{N})$ (or $\ell^p(\mathbb{Z})$): if some orbit under the action of the shift operator has a non-zero limit point then the operator admits a dense orbit, which means that it is hypercyclic. In the bilateral case, their proof is constructive and technically demanding. A new, more abstract, proof allows to extend the result to arbitrary Fréchet sequence spaces in which the natural unit sequences form an unconditional basis. There is also a version for chaotic behaviour.

The talk is based on joint work with Antonio Bonilla.