Hausdorff Dimension and Topological Entropies of a Sequence of Maps

BIŚ Andrzej

University of Lodz, Poland
E-mail andrzej.bis@wmii.uni.lodz.pl

The purpose of this talk is to elucidate the interrelations between entropy-like quantities of dynamical system determined by a sequence of continuous maps $f_n : X \to X$ and Hausdorff dimension of X, where by a dynamical solenoid we mean a sequence of continuous epimorphisms of a compact metric space. For this purpose, we describe a dynamical solenoid by topological entropy-like quantities and investigate the relations between them. For L-Lipschitz dynamical solenoids and locally $\lambda-$expanding dynamical solenoids, we show that the topological entropy and fractal dimensions are closely related. For a locally $\lambda-$expanding dynamical solenoid, we prove that its topological entropy is lower estimated by the Hausdorff dimension of X multiplied by the logarithm of λ.

References

[1] Biś, Andrzej: *Topological and measure-theoretical entropies of nonautonomous dynamical systems.* J. Dynam. Differential Equations **30** (2018), 273–285. Author(s): *Title of paper or Journal or Book.* Where Published. **No** (Year) 85–89.

[2] Biś, Andrzej; Namiecińska, Agnieszka; Hausdorff dimension and topological entropies of a dynamical solenoid. Entropy 22 (2020), no. 5, Paper No. 506, 16 pp. Author(s): *Title of paper or Journal or Book.* Where Published. **No** (Year) 102–189.