ADDITIVE THEORY OF THE BIRKHOFF CURVES

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In 1932 Birkhoff discovered his "remarkable curve", which is actually a strange set and not an arc or topological circle. He constructed a map on an annulus with an unusual invariant set Υ (the *Birkhoff curve*). His curve is the boundary set for the region $G^{(0)}$ and $G^{(1)}$ with different rotation numbers. In 1934 Charppentier proved that the Birkhoff remarkable curve is an indecomposable continuum (atom).

Elementary topological theory including the study of geometrical (dynamical) and numerical properties for Birkhoff's curves being more then two regions common boundary has been constructed. Topological and number invariants respect with to dissipative dynamic system on the plane possessed the Birkhoff curve property have been discussed. There not subsists transversal homoclinic point for dissipative action $\psi \in \mathrm{Diff}(E^2)$! All points of the Birkhoff curve are top of umbrelas being irreducible points. Rotation numbers elementary theory for Birkhoff's curves has been constructed. The theory has been based on the identity of rotation number definition and the Schnirelmann density. This allows to apply the additive number theory methodology to a numerical invariants study. Rotation numbers (Schnirelmann densities) for all regions differ by additive bases with zero density.