On the fine classification of Second Minimal Odd Periodic Orbits of the Continuous Endomorphisms on the Real Line.

An $n$-periodic orbit is second minimal if it is the immediate successor of a minimal period in the Sharkovskii ordering. We prove the conjecture forwarded in (Abdulla, U.G., Iqbal, N., Abdulla, R.U., Abdulla, M.U., and Turnquist, A. (2016). “On the Fine Classification of Periodic Orbits of the Continuous Endomorphisms on the Real Line and Universality in Chaos,” Joint Mathematics Meetings (JMM) 2016, 1116-39-970, Seattle, Washington, January 4-January 9, 2016.) regarding the fine classification of second minimal odd $2k + 1$-periodic, $k \geq 3$ orbits and show there are only $4k - 3$ such orbits with accuracy up to inverses. Furthermore, we demonstrate that each of these periodic orbits can have only one of 6 possible topological structures. (Received September 20, 2016)