

# New Trends in Onedimensional Dynamics Celebrating the 70<sup>th</sup> anniversary of Welington de Melo

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**Title:** One dimensional chaotic attractors

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**Abstract:** Let  $f$  and  $g$  be piecewise smooth interval maps, with critical-singular sets, and  $A$  a cycle of intervals for  $f$ . We prove  $A$  is a topological chaotic attractor if, and only if,  $A$  is a metric chaotic attractor. Let  $h: A \rightarrow A$  be a topological conjugacy between  $f$  and  $g$ . We prove that, if  $h$  is differentiable in a single point  $p$  of the visiting set  $V$ , with non zero derivative, then  $h$  is smooth in  $A$ . Furthermore, the visiting set  $V$  is a residual set of  $A$  and, if the sets  $C_f$  and  $C_g$  are critical then  $V$  has  $\mu$  full measure, for every expanding measure  $\mu$ , with  $\text{supp}\mu = A$ .