Homogeneous continua and uncountable collections of tree-like continua in the plane

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Abstract: At present there are exactly three known non-degenerate homogeneous continua in the plane: the circle, pseudo-arc, and circle of pseudo-arcs. It has long been an open problem to determine if there are any others. I will survey some of the substantial results related to this problem, and discuss the connection between homogeneous plane continua and uncountable collections of tree-like continua in the plane.