Arthur Barkhudaryan
Characterizing polyhedrons and manifolds

Abstract: In [5], W. Taylor shows that each particular compact polyhedron can be characterized in the class of all metrizable spaces containing an arc by means of first order properties of its clone of continuous operations. We will show that such a characterization is possible in the class of compact spaces and in the class of Hausdorff spaces containing an arc. Moreover, our characterization uses only the first order properties of the monoid of self-maps. Also, the possibility of characterizing the closed unit interval of the real line and some related objects in the category of partially ordered sets and monotonous maps will be illustrated.