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Ruiyuan Chen* (ruiyuan@illinois.edu). *Polish groupoids and $\mathcal{L}_{\omega_1\omega}$ -theories.*

It is well-known that every non-Archimedean Polish group is the automorphism group of a countable first-order structure. Analogously, every Polish group is the automorphism group of a separable metric structure. We prove multi-object generalizations of these results: every open non-Archimedean Polish groupoid is Borel equivalent to the groupoid of models on \mathbb{N} of some $\mathcal{L}_{\omega_1\omega}$ -sentence, while every open Polish groupoid is Borel equivalent to the groupoid of metric models on the Urysohn sphere \mathbb{U} of some $\mathcal{L}_{\omega_1\omega}$ -sentence in continuous logic. Moreover, in the discrete case, we can recover every theory from its groupoid of models, so that we have a complete correspondence between countable (discrete) $\mathcal{L}_{\omega_1\omega}$ -theories and open non-Archimedean Polish groupoids. (Received September 13, 2019)