A generalization of pseudogroup structures

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In 1970 André Haefliger proved a classification theorem for regular foliations on open manifolds. Roughly speaking, the idea of Haefliger was to describe foliations of codimension k as Γ-structures, which he identified with a class of principal bundles with structure groupoid. Here Γ stands for a pseudogroup of local transformations of R^k. Haefliger's theorem is obtained by using the classification theorem of principal bundles with structure groupoid and a result of Gromov. The Haefliger theory of foliations is also useful to study transversal geometry, for classical geometries like Riemannian or Symplectic.

In Lie groupoid theory, the concept of pseudogroup of local transformations generalizes to pseudogroup of local bisections. In this talk we will propose an generalization of Γ-structures, for Γ a pseudogroup of local bisections, which extends the description of regular foliations to include some singular foliations, and permits other transversal geometries like Generalized geometry or Courant geometry. Then we will prove a classification theorem for these structures in the spirit of Haefliger's theorem.