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A groupoid approach to the C-algebras of labeled graphs*

The notion of C*-algebras of labelled graphs was developed by Bates and Pask. Such algebras generalize, among others, Cuntz-Krieger algebras, Exel-Laca algebras and graph algebras. The C*-algebras defined from a labelled graph contain a commutative C*-subalgebra called the diagonal subalgebra. By using Exel's framework on how to construct a C*-algebra from an inverse semigroup in this context, we can describe the spectrum of the diagonal subalgebra. The space obtained is a generalization of the boundary path space of a graph. We define a groupoid using the boundary path space of a labelled graph as the unit space in a similar way to what is done for graphs. We show that the C*-algebra of this groupoid is isomorphic to the C*-algebra defined by Bates and Pask.