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**Steven P Haataja\*** ([s-shaataj1@math.unl.edu](mailto:s-shaataj1@math.unl.edu)), University of Nebraska Lincoln, Department of Mathematics, 203 Avery Hall, Lincoln, NE 685880130. *Constructions of  $C^*$ -algebras of inverse semigroups*. Preliminary report.

Let  $S$  be an inverse monoid and  $E$  its semilattice of idempotents. We provide the crossed product decomposition  $C^*(S) \cong C^*(E) \times_{\mu} S$ , starting from the Munn representation of  $S$  on  $E$ . The  $C^*$ -algebra of an inverse semigroup is obtained as a direct summand of the  $C^*$ -algebra of its unitization. Also we prove that the  $C^*$ -algebra of a full amalgam of inverse semigroups is isomorphic to the amalgamated free product of the  $C^*$ -algebras of the inverse semigroups. (Received September 27, 2005)