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**Martin E Malandro\***, Box 2206, Department of Mathematics and Statistics, Sam Houston State University, Huntsville, TX 77341. *Enumeration of finite inverse semigroups*. Preliminary report.

If  $S$  is an inverse semigroup, let  $E(S)$  denote the meet-semilattice of idempotents of  $S$ . We present a fast algorithm which takes a meet-semilattice  $E$  and a natural number  $n$  and computes the inverse semigroups  $S$  of order  $n$  up to isomorphism such that  $E(S) = E$ . Our algorithm can be used to compute  $S(n)$ , the number of inverse semigroups of order  $n$  up to isomorphism, by applying it to the meet-semilattices of orders  $1, \dots, n$ . We present the results of this application for some small values of  $n$ . (Received August 27, 2012)