

1107-05-281

Michael Albert, Cheyne Homberger, Jay Pantone and Vincent Vatter*
(vatter@gmail.com), Department of Mathematics, 1400 Stadium Rd, University of Florida,
Gainesville, FL 32611. *Sorting with C-machines*. Preliminary report.

A C-machine is a machine for generating permutations (or, run in the other direction, for sorting them). Here C is a fixed permutation class. The input to the C machine is the permutation $12\dots n$, and the C-machine may store any permutation order isomorphic to a member of C. At any step in the process one may choose to either output the first entry in the machine or to insert the next entry from the input into any allowable position in the machine. For example, as a very special case, the $Av(12)$ -machine is equivalent to a stack. Using dynamic programming, one can often get a large number (sometimes thousands) of terms enumerating the permutations a given C-machine can generate. In addition to presenting some general theoretical results, I will survey some interesting classes which are generated by C-machines and share some functional equations we don't know how to solve. (Received January 17, 2015)