1016-03-146 **Steffen Lempp** (lempp@math.wisc.edu), Department of Mathematics, University of Wisconsin, 480 Lincoln Drive, Madison, WI 53706, and **Carl Mummert*** (mummertcb@appstate.edu), Department of Mathematics, Walker Hall, Boone, NC 28608. *Filters on computable posets.* Preliminary report.

We explore the problem of constructing maximal and unbounded filters on computable posets. A maximal filter is one that does not extend to a larger filter. We show that every computable poset has a Δ^0_2 maximal filter, and there is a computable poset with no Π^0_1 or Σ^0_1 maximal filter. There is a computable poset on which every maximal filter is Turing complete. An unbounded filter is a filter which achieves each of its lower bounds in the poset. We show that every computable poset has a Σ^0_1 unbounded filter, and there is a computable poset with no Π^0_1 unbounded filter. We show that there is a computable poset on which every unbounded filter is Turing complete. We obtain additional results related to extending arbitrary filters to unbounded filters and forming the upward closures of computable subsets of computable posets. Many of these results give corollaries in the framework of reverse mathematics. (Received February 09, 2006)