Remark 8.38. [0HY] *Let $(J, \leq)$ be a non-empty set with filtering order. We know from* [06V] *that J has no maximum. We extend $(J, \leq)$ by adding a point "∞": Let's set $I = J \cup \{\infty\}$ and decide that $x \leq \infty$ for every $x \in J$. It is easy to verify that $(I, \leq)$ is a direct order, and obviously ∞ is the maximum I.* [a] *Let τ be the topology defined in* [0HW]*. We know that ∞ is an accumulation point. This topology can explain, in a topological sense, the limit already defined in* [0FR]*, and other examples that we will see in Sec.* [2B8].

[a] So $(I, \leq)$ is not a filtering order.