On transformations of posets which have the same bound graph

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In this paper, we consider transformations between posets P and Q, whose upper bound graphs are the same. For posets P and Q whose corresponding upper bound graphs are the same, P can be transformed into Q by a finite sequence of two transformations on posets, that is, $x < y$ $-$ *addition* and $x < y$ $-$ *deletion*. This result induces a characterization on unique upper bound graphs. For a family $\mathcal{S}$ of posets whose upper bound graphs are same, we consider the minimum poset and the maximal posets of this family $\mathcal{S}$. We obtain some upper bound of distance of two posets in $\mathcal{S}$ and we deal with the diameter and the radius on $\mathcal{S}$. We also obtain similar results on double bound graphs.

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