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Bernd S. W. Schroeder* (schroeder@coes.LaTech.edu), Program of Mathematics and Statistics, Louisiana Tech University, Ruston, LA 71272. *Infinite Products of Ordered Sets with the Fixed Point Property.*

The product problem for the fixed point property of ordered sets asks if the product of any two ordered sets with the fixed point property must again have the fixed point property. After Roddy's positive answer for the most important special case of two finite factors, attention shifted to infinite ordered sets. Progress to date has been limited, because it is hard to find infinite ordered sets that have the fixed point property for a non-finitary reason such as dismantlability.

Infinite products of finite ordered sets appeared to be a possible source of such examples. Let the set P_n be made up of two $2n$ -crowns ($n \geq 5$) with the minimal elements of one identified with the maximal elements of the other plus an extra minimal element that is below the top crown. We will show that $\prod_{n=5}^{\infty} P_n$ has the fixed point property. Although none of the factors is dismantlable, dismantlability still plays a strong role in the proof. We also show that if C is a four crown, then P_n^C has the fixed point property. This seems to be the first nontrivial fixed point result for connected exponents. (Received July 11, 2005)