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Department of Mathematics, Columbia, SC 29208, and **Semmy Purewal** and **Stephen Fenner**.  
*Monochromatic boxes in colored grids.*

A  $d$ -dimensional “grid” is a set of the form  $R = [a_1] \times \cdots \times [a_d]$ . A  $d$ -dimensional “box” is a set of the form  $\{b_1, c_1\} \times \cdots \times \{b_d, c_d\}$ . When a grid is  $c$ -colored, must it admit a monochromatic box? If so, we say that  $R$  is  $c$ -guaranteed. This question is a relaxation of one attack on bounding the van der Waerden numbers, and also arises as a natural hypergraph Ramsey problem (viz. the Ramsey numbers of hyperoctahedra). We give conditions on the  $a_i$  for  $R$  to be  $c$ -guaranteed that are asymptotically tight, and analyze the set of minimally  $c$ -guaranteed grids. (Received August 19, 2008)