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**Alvaro Arias\***, Department of Mathematics, University of Denver, 2390 S. York St., Denver, CO 80210, and **Natasha Dobrinen, Gabriel Giron** and **Jose Mijares**. *Banach Spaces from Barriers in High Dimensional Ellentuck Spaces*.

A new hierarchy of Banach spaces  $T_k(d, \theta)$ ,  $k$  any positive integer, is constructed using barriers in high dimensional Ellentuck spaces (introduced by Dobrinen) following the classical framework under which a Tsirelson type norm is defined from a barrier in the Ellentuck space.

It is shown that these spaces contain arbitrarily large copies of  $\ell_\infty^n$ , with the bound constant for all  $n$ . These spaces are  $\ell_p$ -saturated, in fact forming natural extensions of the  $\ell_p$  spaces. They are not isomorphic to each other, but form a strict hierarchy: For fixed  $d$  and  $\theta$ , for any  $j < k$ , the space  $T_j(d, \theta)$  embeds isometrically into  $T_k(d, \theta)$ . (Received September 25, 2017)