

**Meeting:** 1005, Newark, Delaware, LUBOTZKY, Invited Address

1005-20-3            **Alex Lubotzky\***, Hebrew University of Jerusalem, Institute of Mathematics, Jerusalem 91904  
Israel. *Counting primes, groups, and manifolds.*

Let  $D$  be a finitely generated group,  $G$  a semisimple Lie group,  $K$  a maximal compact subgroup and  $Y = G/K$  the associated symmetric space. Let  $x$  be a positive real number (going to infinity). We will discuss questions of the following type:

How many primes are there which are smaller than  $x$ ?

How many subgroups of index at most  $x$  does  $D$  have ?

How many quotient manifolds  $Y$  has, of volume at most  $x$  ?

We will show that these seemingly unrelated questions are actually connected in several different ways. (Received May 13, 2004)