5007-18-266 **Carlos Segovia*** (csegovia@mathi.uni-heidelberg.de), Im Neuenheimer Feld 288, 69120 Heidelberg, Baden Wurt, Germany. *Unexpected relations of cobordism categories with another subjects in mathematics.*

For this poster we introduce the G-cobordism category in dimension 1+1 with G a finite group. This let us to define an invariant associated to every finite group which for groups of the form $\mathbb{Z}_p^n$ this has a nice description with p a prime number. For example for $p = 2$ this number follows the sequence $2, 5, 15, 51, 187, 715, ...$ which writes as $(2^n + 1)(2^{n-1} + 1)/3$. To my knowledge, this number represents the dimension of the universal embedding of the symplectic dual polar space, or is the number of isomorphism classes of regular four folding coverings of a graph with respect to the identity automorphism, or the density of a language L_c with $c = 4$. We present the way to pass from one side to another of the last three options and the invariant given by the cobordism category. Finally, we present some work we have in the analogous part for every prime number. (Received May 10, 2013)