1154-00-486 **Salim El Rouayheb*** (salim.elrouayheb@rutgers.edu), **Rafael G.L. D Oliveira** (rafno.fnord@gmail.com), **David Karpuk** and **Daniel Heinlein**. *How to distribute the multiplication of Secret Matrices?*

We consider the problem of Secure Distributed Matrix Multiplication (SDMM) in which a user wishes to compute the product of two matrices using the assistance of honest but curious workers. In our recent work, we linked code constructions for SDMM with low communication cost to a new combinatorial object that we call Additive Degree Table (ADT). By studying ADTs, we devise a new parametrized family of codes for SDMM that we call GASP (Gap Additive Secure Polynomial) Codes. We also derive lower bounds and prove that GASP codes are optimal in certain regimes. This is a joint work with Rafael D'Oliveira, Daniel Heinlein and David Karpuk. (Received September 05, 2019)