

1135-05-1177      **Michael Tait\*** (mtait@cmu.edu). *Applications of projective plane graphs in combinatorial number theory.*

A sum-product theorem says roughly: a subset of an algebraic structure with certain properties cannot look like both an arithmetic progression and a geometric progression at the same time. In this talk, we discuss how to use graphs coming from projective planes to prove sum-product theorems in a variety of settings. Using similar techniques, we can prove a theorem about the structure of product sets in extra special groups. This is joint work with Thang Pham, Craig Timmons, Le Anh Vinh, and Robert Won. (Received September 20, 2017)