1083-13-155   **Susan Marie Cooper*** (`s.cooper@cmich.edu`), Department of Mathematics, Central Michigan University, Pearce Hall, Room 221, Mt. Pleasant, MI 48859. *Fat Points On Grids.* Preliminary report.

One way to study the extent to which sets of points and their subsets differ is to compare their Hilbert functions. In a 1985 paper, Davis-Geramita-Orecchia give a formula which relates the Hilbert functions of a reduced complete intersection, a subset and its complement inside the complete intersection. This formula has been applied in a wide-variety of situations. It is natural to want a similar formula for non-reduced points. In this talk we will look at this problem for fat points whose support is a subset of a complete intersection constructed on a grid. (Received August 26, 2012)