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Machray Hall, University of Manitoba, Winnipeg, MB R3T 2N2, Canada. *Using Partial  
Intersections To Understand Fat Points*. Preliminary report.

It is well-known that characterizing Hilbert functions of fat points is an open and challenging problem. One approach is to compare the Hilbert functions of these non-reduced schemes to those of well-known families of reduced point sets. In this talk we will investigate how reduced point sets called partial intersections can be used to gain insight about fat points supported inside grid complete intersections. As an application, we will bound the minimum Hamming distance of a family of linear codes. This is joint work in progress with E. Guardo. (Received January 19, 2018)