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**Alan Adolphson\*** ([adolphs@math.okstate.edu](mailto:adolphs@math.okstate.edu)), Department of Mathematics, Oklahoma State University, Stillwater, OK 74078, and **Steven Sperber** ([sperber@math.umn.edu](mailto:sperber@math.umn.edu)), School of Mathematics, University of Minnesota, Minneapolis, MN 55455. *Hodge numbers and exponential sums on  $\mathbb{P}^n$* . Preliminary report.

We discuss some connections between Hodge theory and  $p$ -adic estimates for exponential sums over finite fields. In particular, we examine the case of exponential sums associated to rational functions on projective space whose irreducible factors define a normal crossing divisor. (Received February 11, 2008)