1014-30-1057 **Stephanie Edwards*** (sedwards@udayton.edu), Department of Mathematics, University of Dayton, 300 College Park Dr., Dayton, OH 45469-2316. *Extreme Curvature of Polynomials and Level Curves.*

Let f be a real polynomial of degree $n > 1$, and let κ be its curvature. Determining the maximum number of zeros of κ is an easy problem: since the zeros of κ are the zeros of f'', the curvature of f is 0 at most $n - 2$ times. A much more intriguing problem is to determine the maximum number of extreme values for the function κ, which we conjecture to be $n - 1$. In this talk we give a partial solution to this conjecture and show how this problem is reminiscent of G. Pólya's $P^2 + P'$ problem. In addition we look at how level curves, which were used to solve the $P^2 + P'$ problem, may be able to be used to solve the conjecture. (Received September 27, 2005)