1064-14-316     **Ursula A. Whitcher\*** (`ursula@math.hmc.edu`), Dept. of Mathematics, 301 Platt Blvd., Claremont, CA 91711. *Computing Picard-Fuchs equations for hypersurfaces in toric varieties.* Preliminary report.

Mirror symmetry predicts that varying the complex structure of a family of Calabi-Yau varieties should correspond to varying the Kaehler structure of a mirror family. One may study variations of complex structure for a family of Calabi-Yau varieties using the Picard-Fuchs equation of a holomorphic form. Hypersurfaces in toric varieties offer a rich source of examples of Calabi-Yau varieties. We describe a version of the Griffiths-Dwork technique which may be used to compute the Picard-Fuchs equation for families of quasismooth, semiample hypersurfaces in toric varieties. We use our techniques to study families of K3 surfaces with high Picard rank. (Received September 13, 2010)

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