

**Morrison, David R.**

**Picard-Fuchs equations and mirror maps for hypersurfaces.** (English) [Zbl 0841.32013](#)

Yau, Shing-Tung (ed.), Essays on mirror manifolds. Cambridge, MA: International Press. 241-264 (1992).

The author considers the Picard-Fuchs equation  $\frac{d^s f}{dz^s} + \sum_{j=0}^{s-1} C_j(z) \frac{d^j f}{dz^j} = 0$ , to compute Yukawa couplings and the mirror map. Using a technique due to Griffiths, he is able to compute Picard-Fuchs equations of hypersurfaces.

Explicit examples are shown for certain one-parameter families of Calabi-Yau threefolds.

As an application, the author predicts the number of rational curves on the weighted projective hypersurfaces.

For the entire collection see [\[Zbl 0816.00010\]](#).

Reviewer: [R.A.Hidalgo \(Valparaiso\)](#)

**MSC:**

[32G20](#) Period matrices, variation of Hodge structure; degenerations

[14D05](#) Structure of families (Picard-Lefschetz, monodromy, etc.)

[14J10](#) Families, moduli, classification: algebraic theory

Cited in **4** Reviews  
Cited in **25** Documents

**Keywords:**

Picard-Fuchs equation; Yukawa couplings; mirror map; hypersurfaces; Calabi-Yau threefolds; rational curves

**Full Text:** [arXiv](#)