

# Publications of Daniel Drucker

## Book

Exceptional Lie algebras and the structure of hermitian symmetric spaces, *Memoirs of the AMS* #208, **16** (1978), 211 pages.

## Journal Articles

1. Daniel Drucker, Orbit structure of the exceptional hermitian symmetric spaces I, *Bull. AMS* **80** (1974), 285–289.
2. Daniel Drucker, Orbit structure of the exceptional hermitian symmetric spaces II, *Bull. AMS* **80** (1974), 1225–1229.
3. Daniel Drucker, Une description explicite des orbites dans les espaces hermitiens symétriques irréductibles compacts exceptionnels, *C. R. Acad. Sci. Paris, Ser. A*, **287** (1978), 495–496.
4. Daniel Drucker and David M. Goldschmidt, Graphical evaluation of sparse determinants, *Proc. AMS* **77** (1979), 35–39.
5. Daniel S. Drucker, A second look at Descartes' rule of signs, *Math. Mag.* **52** (1979), 237–238.
6. Daniel Drucker, Simplified descriptions of the exceptional bounded symmetric domains, *Geometriae Dedicata* **10** (1981), 1–29.
7. Lawrence Brenton, Daniel Drucker, and Geert C. E. Prins, Graph theoretic techniques in algebraic geometry II: Construction of singular complex surfaces of the rational cohomology type of  $CP^2$ , *Comment. Math. Helvetici* **56** (1981), 39–58.
8. Daniel Drucker and Daniel Frohardt, Irreducible root systems and finite linear groups of degree two, *Bull. London Math. Soc.* **14** (1982), 142–148.
9. Gary R. Greenfield and Daniel Drucker, On the discriminant of a trinomial, *Linear Algebra and its Applications* **62** (1984), 105–112.
10. David Bindschadler, Lawrence Brenton, and Daniel Drucker, Rational mappings of Del Pezzo surfaces, and singular compactifications of two-dimensional affine varieties, *Tôhoku Math. J.* **36**, 4 (1984), 591–609.
11. Daniel Drucker and Daniel Frohardt, A Euclidean interpretation of Dynkin diagrams and its relation to root systems, *Geometriae Dedicata* **22** (1987), 77–85.
12. Daniel Drucker, Maurice Lou, Semyung Wang, and Kenneth A. Kline, A comparison of mode-acceleration and Ritz vector reduced basis procedures in transient analysis, *SAE Transactions* (1988), Section 5, #880908 (P–210).
13. Lawrence Brenton and Daniel Drucker, Perfect graphs and complex surface singularities with perfect local fundamental group, *Tôhoku Math. J.* **41** (1989), 507–525.
14. Daniel Drucker, Euclidean hypersurfaces with reflection properties, *Geometriae Dedicata* **33** (1990), 325–329.
15. Daniel Drucker, Reflective Euclidean hypersurfaces, *Geometriae Dedicata* **39** (1991), 361–362.
16. Daniel Drucker, Reflection Properties of Curves and Surfaces, *Math. Mag.* **65** (1992), 147–157. (This was the featured article for the June issue.)
17. Daniel Drucker, A Mathematical Roller Derby, *The Coll. Math. J.* **23** (1992), 396–401.

18. Lawrence Brenton and Daniel Drucker, On the number of solutions of  $\sum_{j=1}^s (1/x_j) + 1/(x_1 \cdots x_s) = 1$ , *Journal of Number Theory* **44** (1993), 25–29.
19. Daniel Drucker and Phil Locke, A Natural Classification of Curves and Surfaces With Reflection Properties, *Math. Mag.* **69** (1996), 249–256.
20. Daniel Drucker and Stephen A. Williams, When Does Water Find the Shortest Path Downhill? The Geometry of Steepest Descent Curves, *Amer. Math. Monthly* **110** (2003), 869–885. (This was the lead article in the December 2003 issue.)

### ***Journal Articles Submitted***

1. Daniel Drucker and Stephen A. Williams, A note on the equation  $(f_x)^2 f_{xx} + 2f_x f_y f_{xy} + (f_y)^2 f_{yy} = 0$ .
2. Daniel Drucker and Fat C. Lam, Leg-Slope Generation of Pythagorean Triples.

### ***Papers Published in Conference Proceedings***

1. Lawrence Brenton, Daniel Drucker, and Geert C. E. Prins, Graph theoretic techniques in algebraic geometry I. The extended Dynkin diagram  $\overline{E^8}$  and minimal singular compactifications of  $C^2$ , Proc. Conf. on Several Complex Variables, Princeton, 1979, "Recent Developments in Several Complex Variables", edited by John E. Fornaess, Annals of Math. Studies #100, Princeton Univ. Press, Princeton, NJ, 1981.
2. Lawrence Brenton, David Bindschadler, Daniel Drucker, and Geert C. E. Prins, On global extensions of Dynkin diagrams and singular surfaces of the topological type of  $P^2$ , *Proc. Symposia in Pure Math.* **40** (1983), Part I, 145–151.
3. Daniel Drucker, Maurice Lou, Semyung Wang, and Kenneth A. Kline, A comparison of mode-acceleration and Ritz vector reduced basis procedures in transient analysis, *Proc. Seventh International Conf. on Vehicle Structural Mechanics*, SAE/P-88/210 (April 1988), 195–204. Subsequently published in 1988 *SAE Transactions* (see "Journal Articles Published; Refereed Journals" above).

### ***Other Publications***

1. Daniel Drucker, Triple Jeopardy, *Mathematics Magazine* **52** (1979), 59. (Comments on the paper "Tabulating All Pythagorean Triples" by H. Klostergaard in *Mathematics Magazine* **51** (1978), 226–227, including improvements of the estimates in the paper.)
2. The following articles (which included TI-59 calculator programs) appeared in *PPX-59* (*Texas Instruments Professional Program Exchange*) during 1979–82:
  - i. Prime Factors of an Integer
  - ii. Fractions, Continued Fractions, and Diophantine Equations
  - iii. Mantissas and Exponents
  - iv. Precise DMS Operations
  - v. Test Averages by Section