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Several combinatorial descriptions of the problem of symplectically embedding a 4-dimensional ellipsoid into a ball.

The problem of symplectically embedding a 4-dimensional ellipsoid $E(a,b)$ into a 4-ball as small as possible can be described in many ways: in terms of Fibonacci numbers, in terms of solutions of a Diophantine system coming from special holomorphic spheres in multiple blow-ups of the complex projective plane, by a combinatorial algorithm involving the Cremona transform, and by lattice point counting in a rectangular triangle. The last description gives rise to new examples of period collapse and to first steps of an irrational Ehrhart theory. This talk is based on results of Dan Cristofaro-Gardiner, David Frenkel, Aaron Kleinman, Dusa McDuff and myself. (Received March 20, 2017)