

1067-14-1922

Luke Oeding* (lukeoeding@gmail.com), Dipartimento di Matematica "Ulisse Dini", Viale Morgagni, 67/a, 50134 Firenze, FI, Italy, and **Daniel J. Bates**, CO. *Towards a salmon conjecture.*

By using a result from the numerical algebraic geometry package Bertini we show that (with extremely high probability) a set of degree six and degree nine polynomials cut out the secant variety $\sigma_4(\mathbb{P}^2 \times \mathbb{P}^2 \times \mathbb{P}^3)$. This, combined with an argument provided by Lansberg and Manivel, implies set-theoretic defining equations in degrees 5, 6 and 9 for a much larger set of secant varieties, including $\sigma_4(\mathbb{P}^3 \times \mathbb{P}^3 \times \mathbb{P}^3)$ which is of particular interest in light of the salmon prize offered by E. Allman for the ideal-theoretic defining equations. (Received September 22, 2010)