1145-VL-64 **Chad Awtrey*** (cawtrey@elon.edu). *Galois groups of doubly even octic polynomials.*

Let $f(x) = x^8 + ax^4 + b$ be an irreducible polynomial with rational coefficients, $g(x) = x^4 + ax^2 + b$, G_f the Galois group of f and G_g the Galois group of g. We investigate the extent to which knowledge of G_g determines G_f. Our main result shows that, in general, knowledge of G_g does not automatically determine G_f, except when G_g is cyclic of order 4. We also show that G_f is completely determined when G_g is dihedral of order 8 and $4b - a^2$ is a perfect square. (Received July 18, 2018)