1046-16-1863 **David J Saltman*** (saltman@idaccr.org), Center for Communications Research, 805 Bunn Drive, Princeton, NJ 08540. *Quaternion algebras and their subfields.*

By a theorem of Amitsur, if D/F and E/F are finite dimensional division algebras with the same splitting fields, then D/F and E/F are closely related—they generate the same subgroup of the Brauer group. But the splitting fields used to prove this are large—are, in fact, the generic splitting fields. It is of interest to ask whether when D/F and E/F have the same finite dimensional splitting fields, or more specifically the same maximal subfields, whether the same result holds. When D/F (and E/F) are not quaternion algebras, counterexamples already exist for F a global field. We show that when F has 0 unramified Brauer group, and D/F and E/F have the same maximal subfields, then D is isomorphic to E. We will give the full elementary proof, and then discuss generalizations to higher cohomology due to Skip Garibaldi. (Received September 16, 2008)